DOCUMENT RESUME

ED 055 422 EM 009 269

AUTHOR	Mayeda, Tadashi A.
TITLE	Guide to Facilities, Capabilities, and Programs of Medical Schools in the United States.
INSTITUTION	Interuniversity Communications Council (EDUCOM), Princeton, N. J.
SPONS AGENCY	National Library of Medicine (DHEW), Bethesda, Md.
REPORT NO	RM-869
PUB DATE	Jan 69
NOTE	380p.
AVAILABLE FROM	EDUCOM, P. O. BOX 364, Rosedale Road, Princeton, New Jersey 08540
EDRS PRICE	MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	Audiovisual Communication; *Audiovisual Programs; Communications; Community Action; Continuous Learning; Directories; *Information Networks; *Medical Schools; Professional Continuing Education; Professional Education; *Surveys; *University Extension
IDENTIFIERS	*Biomedical Communications Network

ABSTRACT

The information in this document was gathered to aid analysts and designers of the proposed Biomedical Communications Network (BCN) of the National Library of Medicine. The current capabilities and facilities of medical schools in areas of activity impinging on the concept and role of BCN are summarized. Medical schools are listed geographically by state. Information provided for each school includes types of financial support, enrollment, number of medical schools in the state, clinical facilities, size of medical library, personnel, statwide statistics on population and hospital facilities, common carrier services, and community action programs. The common carrier services are the potential links between the medical school and other institutions. Community action programs are defined here as those extramural library, specialized information, specialized education, and audio and audiovisual offerings to the non-academic members of that institution. Indexes to the schools, personnel, and programs are included. (JY)

ED055422

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY
EDUCOM
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

EDUCOM

RESEARCH MEMORANDUM

Biomedical Communications Project

GUIDE TO FACILITIES, CAPABILITIES, AND PROGRAMS OF MEDICAL SCHOOLS IN THE UNITED STATES

RM-869

January 1969

Tadashi A. Mayeda

Prepared for the
National Library of Medicine
Bethesda, Maryland

Under contract with the
University of Pittsburgh
NIH Contract No. PH-43-67-1152

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

EM 009 269

100 CHARLES RIVER PLAZA BOSTON, MASS. 02114 617-227-1805

ED033422

GUIDE TO
FACILITIES, CAPABILITIES, AND PROGRAMS OF MEDICAL SCHOOLS IN THE UNITED STATES

RM-869

January 1969

Tadashi A. Mayeda
Research Associate
EDUCOM

Prepared for the
National Library of Medicine
Bethesda, Maryland

Under contract with the
University of Pittsburgh
NIH Contract No. PH-43-67-1152

The research upon which this publication was based was performed pursuant to contract No. PH-43-67-1152 with the National Library of Medicine, Public Health Service, U.S. Department of Health, Education, and Welfare.

GUIDE TO FACILITIES, CAPABILITIES, AND PROGRAMS OF MEDICAL SCHOOLS IN THE UNITED STATES

Table of Contents........................i

Index of Medical Schools.................x

Index of Names..........................xvi

General Index...........................xxiv

Index to Common Carrier Services.........xxxvii

TABLE OF CONTENTS

PREFACE – 0.11–0.12

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Alabama				
Medical College of Alabama	1.11	1.12	1.14–15	1.16
Arizona				
University of Arizona College of Medicine..........	2.11	*	2.14	*
Arkansas				
University of Arkansas School of Medicine........	3.11	3.12	*	3.16
California				
University of California, Davis, School of Medicine.	4.11	*	*	*
University of California, Irvine, California College of Medicine..............	4.21	*	4.24	4.26
University of California at Los Angeles (UCLA) School of Medicine........	4.31	4.32	4.34	4.36
University of California at San Diego School of Medicine..................	4.41	*	*	*
University of California School of Medicine, San Francisco.................	4.51	4.52	4.54	4.56
Loma Linda University School of Medicine........	4.61	*	4.64	4.66
University of Southern California School of Medicine.....................	4.71	4.72	4.74–75	4.76
Stanford University School of Medicine...............	4.81	4.82	*	4.86
Colorado				
University of Colorado School of Medicine........	5.11	5.12	5.14	5.16

*Not Presently Available

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Connecticut				
University of Connecticut School of Medicine........	6.11 6.11	*	*	*
Yale University School of Medicine..................	6.21	*	*	6.26
District of Columbia				
Georgetown University School of Medicine........	7.11	7.12	7.14	7.16
George Washington University School of Medicine...	7.21	7.22	7.24	7.26
Howard University College of Medicine..............	7.31	*	7.34	7.36
Florida				
University of Florida College of Medicine..........	8.11	*	8.14	8.16
University of Miami School of Medicine..............	8.21	*	8.24-25	8.26
Georgia				
Emory University School of Medicine..................	9.11	9.12	*	9.16
Medical College of Georgia	9.21	9.22	9.24	9.26
Hawaii				
University of Hawaii School of Medicine........	10.11	*	*	*
Illinois				
Chicago Medical School....	11.11	11.12	*	11.16
University of Chicago School of Medicine........	11.21	*	11.24	11.26
University of Illinois College of Medicine.......	11.31	*	11.34	11.36
Northwestern University Medical School...........	11.41	*	11.44-45	11.46

6

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Illinois (cont.)				
Loyola University Stritch School of Medicine.......	11.51	*	11.54	11.56
Indiana				
Indiana University School of Medicine..............	12.11	12.12	12.14	12.16
Iowa				
University of Iowa College of Medicine.........	13.11	*	13.14	13.16
Kansas				
University of Kansas School of Medicine.......	14.11	14.12	14.14	14.16
Kentucky				
University of Kentucky College of Medicine......	15.11	*	15.14	15.16
University of Louisville School of Medicine.......	15.21	*	15.24	15.26
Louisiana				
Louisiana State University School of Medicine....	16.11	16.12	*	16.16
Louisiana State University Medical Center Shreveport School of Medicine..	*	*	*	*
Tulane University School of Medicine..............	16.31	16.32	16.34	16.36
Maryland				
Johns Hopkins University School of Medicine.......	17.11	17.12	17.14	17.16
University of Maryland School of Medicine.......	17.21	*	17.24	17.26
Massachusetts				
Boston University School of Medicine..............	18.11	18.12	18.14	18.16

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Massachusetts (cont.)				
Harvard Medical School...	18.21	18.22	18.24-25	18.26
University of Massachusetts School of Medicine.	18.31	*	*	*
Tufts University School of Medicine..............	18.41	*	*	18.46
Michigan				
University of Michigan Medical School...........	19.11	19.12	19.14-15	19.16
Michigan State University College of Human Medicine	19.21	*	19.24	*
Wayne State University School of Medicine.......	19.31	*	19.34	19.36
Minnesota				
University of Minnesota Medical School...........	20.11	*	20.14	20.16
Mayo Graduate School of Medicine.................	*	*	*	*
Mississippi				
University of Mississippi School of Medicine.......	21.11	*	21.14	21.16
Missouri				
University of Missouri School of Medicine.......	22.11	22.12-13	22.14-15	22.16
Saint Louis University School of Medicine.......	22.21	22.22	22.24	22.26
Washington University School of Medicine.......	22.31	22.32	22.34	22.36
Nebraska				
Creighton University School of Medicine.......	23.11	*	23.14	23.16
University of Nebraska College of Medicine......	23.21	23.22	23.24	23.26

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Nevada				
University of Nevada School of Medicine.......	*	*	*	*
New Hampshire				
Dartmouth Medical School.	25.11	25.12–13	25.14	25.16
New Jersey				
New Jersey College of Medicine and Dentistry...	26.11	26.12	*	26.16
Rutgers—The State University, Rutgers Medical School..................	26.21	*	*	*
New York				
Albany Medical College of Union University.........	28.11	28.12–13	28.14	28.16
Columbia University College of Physicians and Surgeons.................	28.21	*	28.24	28.26
Cornell University Medical College..............	28.31	*	*	28.36
Albert Einstein College of Medicine, Yeshiva University.................	28.41	*	28.44	28.46
Mount Sinai School of Medicine.................	28.51	*	*	*
New York Medical College.	28.61	*	*	28.66
New York University School of Medicine.......	28.71	*	28.74	28.76
University of Rochester School of Medicine and Dentistry................	28.81	28.82	28.84–85	28.86
State University of New York at Buffalo School of Medicine.................	28.91	29.92	*	28.96

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
New York (cont.)				
State University of New York Downstate Medical Center	28.101	*	*	28.106
State University of New York (Stony Brook) College of Medicine	*	*	*	*
State University of New York Upstate Medical Center	28.121	28.122	28.124	28.126
North Carolina				
Bowman Gray School of Medicine of Wake Forest College	29.11	29.12	29.14	29.16
Duke University School of Medicine	29.21	29.22–23	29.24–25	29.26
University of North Carolina School of Medicine	29.31	29.32	29.34	29.36
North Dakota				
University of North Dakota School of Medicine	30.11	*	30.14	30.16
Ohio				
Case Western Reserve University School of Medicine	31.11	*	31.14–15	31.16
University of Cincinnati College of Medicine	31.21	31.22	31.24	31.26
Ohio State University College of Medicine	31.31	31.32	31.34	31.36
Medical College of Ohio at Toledo	*	*	*	*
Oklahoma				
University of Oklahoma School of Medicine	32.11	*	32.14	32.16

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Oregon				
University of Oregon Medical School..............	33.11	33.12	*	33.16
Pennsylvania				
Hahnemann Medical College of Philadelphia..........	34.11	*	34.14	34.16
Jefferson Medical College of Philadelphia..........	34.21	*	34.24	34.26
University of Pennsylvania School of Medicine.	34.31	*	34.34	34.36
University of Pennsylvania School of Medicine, Division of Graduate Medicine....................	*	*	*	*
Pennsylvania State University College of Medicine, Milton S. Hershey Medical Center...........	34.51	*	34.54	*
University of Pittsburgh School of Medicine.......	34.61	34.62	34.64	34.66
Temple University School of Medicine..............	34.71	*	34.74	34.76
Woman's Medical College of Pennsylvania..........	34.81	*	*	34.86
Rhode Island				
Brown University, Division of Biological and Medical Sciences.........	35.11	*	*	*
South Carolina				
Medical College of South Carolina.................	36.11	36.12	*	36.16
South Dakota				
The University of South Dakota School of Medicine	37.11	*	37.14	37.16

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
Tennessee				
Meharry Medical College School of Medicine.......	38.11	38.12	38.14	38.16
University of Tennessee College of Medicine......	38.21	38.22	38.24	38.26
Vanderbilt University School of Medicine.......	38.31	38.32	38.34	38.36
Texas				
Baylor University College of Medicine.............	39.11	*	39.14	39.16
University of Texas Medical Branch..............	39.21	39.22	39.24	39.26
University of Texas Medical School at San Antonio	39.31	*	*	*
University of Texas Southwestern Medical School..................	39.41	*	*	39.46
Utah				
University of Utah College of Medicine.........	40.11	40.12-13	40.14-15	*
Vermont				
University of Vermont College of Medicine......	41.11	*	41.14	41.16
Virginia				
Medical College of Virginia School of Medicine.	42.11	*	42.14	42.16
University of Virginia School of Medicine.......	42.21	*	42.24	42.26
Washington				
University of Washington School of Medicine.......	43.11	43.12-13	43.14-15	43.16

	Medical School Data	Community Action Programs	Related Activities	Common Carrier Services
West Virginia				
West Virginia University School of Medicine.......	44.11	*	*	44.16
Wisconsin				
Marquette School of Medicine....................	45.11	45.12–13–13a	45.14	45.16
University of Wisconsin Medical School...........	45.21	45.22–23	45.24–25	45.26

GLOSSARY
Terms and schedule of rates of common carrier services................. 100.11–17

INDEX OF MEDICAL SCHOOLS

Albany Medical College of Union University. 28.11

Albert Einstein College of Medicine of
Yeshiva University. 28.41

Baylor University College of Medicine. 39.11

Boston University School of Medicine. 18.11

Bowman Gray School of Medicine of
Wake Forest University. 29.11

Case Western Reserve University
School of Medicine. 31.11

The Chicago Medical School. 11.11

Columbia University College of
Physicians and Surgeons. 28.21

Cornell University Medical College. 28.31

Creighton University School of Medicine. 23.11

Dartmouth Medical School. 25.11

Duke University School of Medicine. 29.21

Emory University School of Medicine. 9.11

George Washington University
School of Medicine. 7.21

Georgetown University School of Medicine. 7.11

Hahnemann Medical College. 34.11

Harvard Medical School. 18.21

Howard University College of Medicine. 7.31

Indiana University School of Medicine. 12.11

INDEX OF MEDICAL SCHOOLS (CONT'D)

The Jefferson Medical College of Philadelphia 34.21

Johns Hopkins University School of Medicine 17.11

Loma Linda University School of Medicine 4.61

Louisiana State University School of Medicine 16.11

Loyola University Stritch School of Medicine 11.51

Marquette School of Medicine 45.11

Medical College of Alabama 1.11

Medical College of Georgia 9.21

Medical College of South Carolina School of Medicine 36.11

Medical College of Virginia School of Medicine 42.11

Meharry Medical College School of Medicine 38.11

Michigan State University College of Human Medicine 19.21

The Milton S. Hershey Medical Center 34.51

Mount Sinai School of Medicine of the City University of New York 28.51

New Jersey College of Medicine and Dentistry 26.11

New York Medical College 28.61

New York University School of Medicine 28.71

Northwestern University Medical School 11.41

INDEX OF MEDICAL SCHOOLS (CONT'D)

Ohio State University College of Medicine. 31.31

The Pennsylvania State University College of Medicine - The Milton S. Hershey Medical Center. 34.51

Rutgers - The State University - Rutgers Medical School. 26.21

Saint Louis University School of Medicine. 22.21

Stanford University School of Medicine. 4.81

State University of New York at Buffalo School of Medicine. 28.91

State University of New York Downstate Medical Center. 27.101

State University of New York Upstate Medical Center. 28.121

Stritch School of Medicine. 11.51

Temple University School of Medicine of the Commonwealth System of Higher Education. 34.71

Tufts University School of Medicine. 18.41

Tulane University School of Medicine. 16.31

Union University. 28.11

University of Arizona College of Medicine. 2.11

The University of Arkansas School of Medicine. 3.11

University of California, Davis School of Medicine. 4.11

University of California, Irvine, California College of Medicine. 4.21

INDEX OF MEDICAL SCHOOLS (CONT'D)

University of California at Los Angeles (UCLA) School of Medicine. 4.31

University of California, San Diego School of Medicine. 4.41

University of California School of Medicine, San Francisco. 4.51

University of Chicago School of Medicine. 11.21

University of Cincinnati College of Medicine. 31.21

University of Colorado School of Medicine. 5.11

University of Connecticut School of Medicine. 6.11

University of Florida College of Medicine. 8.11

University of Hawaii School of Medicine. 10.11

University of Illinois College of Medicine. 11.31

University of Iowa College of Medicine. 13.11

University of Kansas School of Medicine. 14.11

University of Kentucky College of Medicine. 15.11

University of Louisville School of Medicine. 15.21

University of Maryland School of Medicine. 17.21

University of Massachusetts School of Medicine. 18.31

University of Miami School of Medicine. 8.21

University of Michigan Medical School 19.11

University of Minnesota Medical School. 20.11

University of Mississippi School of Medicine. 21.11

INDEX OF MEDICAL SCHOOLS (CONT'D)

University of Missouri School of Medicine. 22.11

University of Nebraska College of Medicine. 23.21

University of New Mexico School of Medicine. 27.11

University of North Carolina School of Medicine. 29.31

University of North Dakota School of Medicine. 30.11

University of Oklahoma School of Medicine. 32.11

University of Oregon Medical School. 33.11

University of Pennsylvania School of Medicine. 34.31

University of Pittsburgh School of Medicine. 34.61

University of Rochester School of Medicine and Dentistry. 28.81

University of South Dakota School of Medicine. 37.11

University of Southern California. 4.71

University of Tennessee College of Medicine. 38.21

University of Texas Medical Branch. 39.21

University of Texas Medical School at San Antonio. 39.31

University of Texas Southwestern Medical School. 39.41

University of Utah College of Medicine. 40.11

18

INDEX OF MEDICAL SCHOOLS (CONT'D)

University of Vermont College of Medicine. 41.11

University of Virginia Medical School. 42.21

University of Washington School of Medicine. 43.11

University of Wisconsin Medical School. 45.21

Vanderbilt University School of Medicine. 38.31

Washington University School of Medicine. 22.31

Wayne State University School of Medicine. 19.31

West Virginia University School of Medicine. 44.11

Woman's Medical College of Pennsylvania. 34.81

Yale University School of Medicine. 6.21

Yeshiva University. 28.41

INDEX OF NAMES

Agnello, Samuel A. 29.21
Ahlquist, Raymond P. 9.21
Akiyama, Emiko.......... 28.31
Allan, Frank D. 7.21
Alman, John E. 18.14
Alvis, Harry J. 28.91
Andrews, Edward C. 41.11
Anker, Ursula H. 28.11
Anlyan, William G. 29.21
Archer, James........... 5.14
Atchison, William F. 17.24
Atkinson, William H. 8.24
Baird, David W. E. 33.11
Baird, Violet M. 39.41
Bakst, Henry J. 18.11 18.12
Baldwin, Boyd........... 43.11
Balin, Howard........... 34.34
Balintfy, Joseph........ 16.32
Banks, Gail............. 22.11
Barnett, William O. 21.11
Barr, William........... 31.11
Batson, Randolph........ 38.31
Beach, Robert O. 8.11
Beal, J. Wayne.......... 32.14
Beatty, William K. 11.41
Beckwith, Frances L. 45.11
Benschoter, Reba........ 23.21
Bevan, Donald........... 43.14
Bird, Edward............ 21.14
Bishop, David........... 2.11
Blanchard, J. Richard.... 41..
Blocker, Truman G. 39.21
Bloomquist, Harold J. .. 18.21
Bodkin.................. 8.24
Bost, Roger B. 3.11
Bostick, Warren L. 4.21
Bowman, Richard......... 11.34
Boyden, George M. 27.11
Brandon, Alfred N. 17.11
Brandt, Edward.......... 32.14
Brayton, Donald F. 4.31
Breslow, Lester......... 4.34
Bridegam, Willis........ 28.81
Briggs, Bill J. 22.21 22.24
Brodman, Estelle....... 22.31
Brown, Sarah C. 1.11
Brownstein, Stanley..... 11.11
Brudvig, Glenn.......... 20.11
Bruetman, Martin........ 11.12
Bruhn, John M. 1.11
Bryant, Fred D. 34.51
Bucher, Robert M. 37.71
Budkin, Alberto......... 8.25
Callison, M. K. 38.21
Caravata, Charles M. ... 42.11
Carter, Robert E. 21.11
Castle, C. Hilmon....... 40.11
Castleton, Kenneth B. .. 40.11
Cavanagh, G. S. T. 29.21
Cazort, Ralph J. 38.11 38.14
Chambers, J. C. 36.12

Index of Names (cont.)

Chapin, Richard E. 19.21
Chapman, Carleton B. 25.11
Chapman, John............ 38.32
Cheever, F. Sargent...... 34.61
Clausman, Gilbert J. 28.71
Clem, Russell............ 39.14
Conger, John J. 5.11
Conley, Veronica......... 22.34
Cooke, Lucy.............. 34.11
Cooper, John............. 11.42
Cooper, William.......... 5.11
Crawford, Helen.......... 45.21
Crawford, Susan.......... 31.15
Crockette, Charles L. ... 42.21
Cryder, Robert W. 13.11
Cullen, Stuart C. 4.51
Cutting, Windsor C. 10.11
Deitrick, John E. 28.31
DeLeon, Antonio C. 7.14
DeMaria, William J. A. .. 29.21
Dennis, James L. 32.11
Densen, Paul............. 18.24
Diamond, Ruth Y. 34.71
Dietz, Nicholas.......... 23.11
DiPalma, Joseph R. 34.11
Divett, Robert T. 27.11
Doyle, Patrick........... 7.11
7.12
7.14
Drager, Ida J. 34.81
Drake, Mayo............. 8.11
duBeau, Normand......... 22.14
Duncan, Charles......... 15.21
DuVal, Merlin K. 2.11
2.14
Eagle, J. Frederick..... 28.61
Ebaugh, Franklin G. 18.11
Ebbert, A. 6.21
Ebert, Myrl............. 29.31
Ebert, Robert H. 18.21
18.25
Eddy, Leonard M. 32.11
Egan, Richard L. 23.11
Egeberg, Roger O. 4.71
Eichman, Peter L. 45.21
Eisele, Wesley.......... 19.12
Elsom, Katherine........ 34.34
Emmel, Victor M. 28.81
Ethridge, Clayton B. ... 7.21
Evans, Robert........... 17.24
Farber, Seymour M. 4.51
4.54
Federman, Daniel D. 18.21
Felix, Robert H. 22.21
Fetter, Franklin C. 36.11
Fiel, Nicholas.......... 19.24
Finerty, John C. 16.11
Fitz, Reginald H. 27.11
Fleischer, Daniel S. ... 34.71
34.74
Fleming, Thomas P. 28.21

Index of Names (cont.)

Foley, Joseph M. 31.11
Fontana, Joseph.......... 1.15
Frazier, Horace M. 38.11
Friedberg, Seymour....... 12.11
Froelich, Robert E. 22.11
Fry, Alderson............ 44.11
Gardner, Ernest D. 19.31
Garrison, Glen E. 9.21
Gergely, Emma C. 26.21
Glaser, Edward L. 31.14
Glaser, Robert J. 4.81
Glore, James............. 12.11
Goldfinger, Stephen...... 18.22
Goldstein, David......... 28.84
Goodwin, A. Hooker....... 11.31
Gordon, Harry H. 28.41
Gordon, Michael.......... 8.25
Grad, Tamara E. 28.61
Graham, Irene............ 21.11
Grobstein, Clifford...... 4.41
Groom, Dale.............. 36.11
Gross, Stanley B. 31.24
Grover, Myron R. 33.11
Gruen, Sonia L. 28.41
Grulee, Clifford G. 31.21
Gurin, Samuel............ 34.31
Hall, Dale J. 12.14
Hamlin, Omer............. 15.11
Harden, K. Albert........ 7.31
Hardin, Robert C. 13.11
Hardy, Clyde............. 29.14
Harrell, George T. 34.51
Harvin, Marie........... 3.11
Harwood, Theodore H. ... 30.11
Hawkins, Miriam......... 28.91
Hayman, George E. 38.34
Hetzner, Bernice........ 23.21
23.22

Hicks, June I. 25.11
Hill, Joseph K. 28.101
Hill, S. Richardson..... 1.11
Hinshaw, David B. 4.61
Hitt, Sam W. 6.11
Hogness, John R. 43.11
Holland, William C. 21.11
Hopkins, Ernest L. 7.31
7.34

Houston, Frances R. 34.31
Howard, Robert B. 20.11
Hubbard, William N. 19.11
Huelsman, Helen......... 11.51
Hughes, James........... 0.12
Hughes, Margaret E. 33.11
Hunt, Andrew D. 19.21
Hunt, Earl.............. 43.14
Hunt, Elizabeth.........32.11
Hunter, George H. 41.11
Hunter, Thomas H. 42.21
Huntley, June Leath..... 42.11
Hurst, J. Willis........ 9.11
Hutchison, Marilyn...... 45.24

Index of Names (cont.)

Insinger, Anne........... 34.81
Irwin, Glenn W. 12.11
Ische, John P. 16.11
Jacobson, Harold......... 28.41
Jacobson, Leon O. 11.21
James, George............ 28.51
Jason, Hilliard.......... 19.24
Jenkins, H. Perry........ 11.21
Jensen, Wilbur F. 20.11
Johnson, Eleanor......... 11.21
Jonah, David A. 35.11
Jones, M. Irene.......... 38.21
Jordan, William S. 15.11
Judge, Richard A. 19.11 19.14
Kagan, Norma,............ 19.24
Kaufman, M. Ralph........ 28.51
Kehlo, Theodore.......... 43.14
Kellow, William F. 34.21
Kenney, Brigitte......... 21.14
Kerrigan, Gerald A. 45.11
Killough, John H. 34.21
King, M. Kenton.......... 22.31 22.34
Kingsland, L. C. 22.12
Kinney, Thomas........... 29.25
Klapper, Margaret S. 1.11 1.12
Knabe, George W. 37.11
Korein, Julius........... 28.74
Koster, Desmond.......... 36.11
Kovacs, Helen............ 28.101
Krehl, W. A. 13.14
Kreuger, Rex............. 5.14
Kron, Irvin W. 14.11
Kronick, David A. 31.15 39.31
Kronmal, Richard........ 43.14
Laatz, Mary Jane........ 12.11
Langner, Mildred Crowe.. 8.21
Laviana, Don............ 45.24
Leavitt, Edward P. 18.41
Lein, John.............. 43.12
Lentz, Robert T. 34.21
Levitt, LeRoy P. 11.11 11.12
Leymaster, Glen R. 34.81
Lindberg, Donald........ 22.13
Lisansky, E. T. 17.21
Little, Joseph A. 38.31
Lloyd, John S. 4.74
Loftin, Ann............. 40.11
Lukemeyer, George T. ... 12.11
Lunetta, Salvatore...... 18.11
Lynch, George........... 29.11
Lyons, Richard H. 28.121
Lysaught, Jerome P. 28.85
MacIntyre, Robert D. ... 39.11 39.14
Maloney, William F. 18.41
Mann, Floyd C. 19.14
Manning, James A. 28.81

Index of Names (cont.)

Manning, Phil R. 4.71
4.72

Manson, Clara S. 4.81

Margolin, Joseph......... 7.24

Mauny, F. Maxton......... 29.24

Maxfield, David K. 19.11

Mayer, William D. 22.11

Mayton, Wallace H. 38.21
38.22

McClure, Merlyn P. 31.21

McLemore, Roberta T. 7.31

McMurry, Glen............ 4.75

McNeary, W. 19.15

Meads, Manson............ 29.11

Meiling, Richard L. 31.31

Mellinkoff, Sherman M. .. 4.31

Melville, Robert......... 29.25

Merrill, Irving R. 4.51

Merritt, H. Houston...... 28.21

Meyer, Thomas C. 30.14
45.21
45.24

Miller, Arden C. 29.34

Montgomery, Hugh......... 18.31

Moore, Floy J. 21.14

Moore, Hilda E. 17.21

Morgan, Russell H. 17.11

Moyer, John H. 34.11

Muller, Mervin........... 45.24

Mykytew, Marion.......... 45.11

Nelson, Kinloch.......... 42.11

Nemir, Paul............. 34.31

Nielsen, Ivan........... 4.64

Nodine, John............ 34.14

O'Byrne, Margaret....... 7.11

O'Leary, Francis B. 22.21

Orbison, J. Lowell...... 28.81

Pace, William G. 31.31
31.32

Palmer, John............ 2.14

Pannill, F. C. 39.31

Pantera, Robert E. 28.91

Parker, Marilyn......... 29.24

Parker, Ralph C. 28.84

Parker, Virginia........ 39.11

Parks, John............. 7.21

Patterson, John W. 6.11

Perera, George A. 28.21

Perkoff, Gerald......... 22.32

Perry, Frank A. 38.11
38.14

Peters, Robert S. 4.24

Petersen, A. S. 11.41

Peterson, John E. 4.61

Peterson, Osler......... 29.34

Pings, Vern M. 19.31

Pisacano, Nicolas J. ... 15.11

Pizer, Irwin H. 28.121

Plotz, Charles M. 28.101

Pollack, Jerome......... 18.25

Postell, William D. 16.31

Index of Names (cont.)

Potts, Robert E. 31.34
Powers, William........... 22.32
Prior, John A. 31.32
Proctor, Vilma............ 4.71
Rainsford, Sadie H. 9.21
Ramey, James.............. 18.14
39.14
Rapaport, Elliot.......... 4.52
Rath, Gustave............. 11.44
Rauch, Jerome S. 26.11
Rawson, Rulon W. 26.11
Read, Willard O. 37.11
Redlich, F. C. 6.21
Rees, Alan................ 31.15
Rees, Thomas H. 31.21
31.24
Reger, Scott N. 13.11
Reider.................... 34.14
Reynolds, Carroll F. 34.61
34.62
Rice, Walter G. 9.21
Richardson, Arthur P. 9.11
Richardson, William P. ... 29.31
29.32
Richmond, Julius B. 28.121
Rising, Jesse............. 14.11
Robbins, Frederick C. 31.11
Robertson, George......... 18.41
Robertson, William O. 43.12
Rogers, Frank B. 5.11
Romano, Michael T. 19.14
Rose, John C. 7.11
Rubenstein, Albert...... 11.44
Runge, Elisabeth D. 39.21
Saltzman, Stanton W. ... 34.71
Sanchez, Rafael C. 16.11
Saul, Ezra V. 18.41
Saunders,
John B. de C. M. ... 4.51
Schaffer, Melvin C. 42.14
Schatz, Irwin........... 19.31
Schick, Frank........... 45.25
Schieve, James F. 31.21
Schmidt, Dean A. 22.11
Schneider, Aleene....... 22.34
Schoolman, Harold....... 28.14
Schrenk, George......... 34.34
Seibert, Dean J. 25.11
25.12
Selfridge, R. G. 8.14
Shaffner, Louis deS. ... 29.11
Sharry, John J. 1.11
1.14
Sheehan, John F. 11.51
Shepard, Richard........ 17.14
Shilling, C. 7.24
Shook, Frank W. 15.21
Shorey, Winston K. 3.11
Simon, Ralph............ 21.14
Slack, Warner........... 22.15
45.25
Sleeth, Clark K. 44.11

Index of Names (cont.)

Smith, Donn L. 15.21
Smith, Fay................ 23.21
Smith, Jay A. 11.11
Smith, John E. 4.21
Smith, Nat E. 11.31
Soutter, Lamar............ 18.31
Sprague, Charles C. 39.41
Stein, Marvin............. 20.14
Steinke, Eleanor G. 38.31
Stetten, DeWitt........... 26.21
Stevens, Robert D. 10.11
Stibitz, George R. 25.14
Stoltz, Merton P. 35.11
Stone William S. 17.21
Stone, C. Walter.......... 34.62
Strong, Patricia M. 38.11
Sullivan, W. A. 20.11
Summers, George V. 4.61
Surgenor, Douglas M. 28.91, 28.92
Suter, Emanuel............ 8.11
Sutherland, James......... 9.24
Swift, Loretta............ 30.11
Tamagne, Irene............ 7.24
Taulbee, Orrin............ 34.64
Taylor, Isaac M. 29.31
Thomas, James B. 19.24
Thomas, Lewis............. 28.71
Titley, Joan.............. 15.21, 31.24
Towsley, Harry A. 19.11
Troxel, Wilma........... 11.31
Truelson, Stanley D. ... 6.21
Tucker, Norman.......... 45.24
Tupin, Joe P. 39.22
Tupper, C. John......... 4.11
Turner, Florence E. 18.11
Turner, Thomas B. 17.11
Uhl, H. S. M. 35.11
Vermeulen, C. W. 11.21
Viamonte, Manuel I. 8.21
Voigt, Melvin J. 4.41
Von Foerster, Heinz..... 11.34
Vosper, Robert.......... 4.31
Waine, Stanley.......... 28.41
Wannarka, Marjory....... 23.11
Warmington, Anne A. 31.31
Warren W. Dean.......... 8.21
Wartman, William B. 11.41, 11.44
Waters, Charles......... 19.14
Ways, Peter............. 19.24
Weeg, Gerard............ 13.14
Weil, M. H. 4.74
Welsh, George W. 41.11
West, Kelly M. 32.11
Wiggers, H. C. 28.11
Williams, Kenneth....... 19.12
Wilson, Vernon.......... 22.12

Index of Names (cont.)

Withrow, Betty............ 29.11
Wittson, Cecil L. 23.21
23.22
Woessner, Frederick....... 8.24
Wolf, George A. 14.11
Woodbury, Max............. 29.24
Woolsey, Frank M. 28.11
28.12
28.14
Wyllie, John Cook....... 42.21
Yaezell, Jeannette...... 4.51
Yarnall, Stephen........ 43.14
Young, Isabella F. 7.21
Young, Richard H. 11.41

27

GENERAL INDEX

(see also INDEX TO COMMON CARRIER SERVICES)

Association of Medical Television Broadcasters. 40.14

Audiotape facility, dial-access. 22.15, 26.12, 30.14, 45.22, 45.23

Audiotape facility, dial-access, automatic answering. 22.14

Audiotape facility, national dial-access. 45.25

Audiotapes. 7.14, 22.14, 22.15, 22.24, 26.12, 30.14, 40.12, 45.22, 45.25

Audiotapes, lecture summaries. 22.15

Audio-visual activities. 1.14, 7.24, 7.34, 8.24, 9.24, 11.34, 11.44,11.54, 14.14, 22.24, 23.14, 23.24,28.12, 28.14, 28.122, 31.34, 34.62,38.12, 43.12

Audio-visual continuing education 8 mm films. 37.14

Audio-visuals, heart disease, cancer, and stroke. 7.24

Audio-visuals, self-instructional . 14.14, 19.24, 28.84, 43.14

Audio-visuals: (see also under Common Carrier Services)
  Association of Medical Television Broadcasters. 40.14
  Audiotape facility, dial-access. 22.15, 26.12, 30.14, 45.22, 55.23
  Audiotape facility, dial-access, automatic answering. 22.14
  Audiotape facility, national dial-access. 45.25
  Audiotapes. 7.14, 22.14, 22.15, 22.24, 26.12, 30.14, 40.12, 45.22, 45.25
  Audiotapes, lecture summaries. 22.15
  Audio-visual activities. . . . . . . 1.14 , 7.24, 7.34, 8.24, 9.24, 11.34, 11.44, 11.54, 14.14, 22.24, 23.14, 23.24, 28.12, 28.14, 28.122, 31.34, 34.62, 38.12, 43.12

General Index (Cont.)

Audio-visuals (cont.)
  Audio-visual continuing education, 8 mm films. 37.14
  Audio-visuals, heart disease, cancer, stroke. 7.24
  Audio-visuals, self-instructional.14.14, 19.24, 28.84, 43.14
  Film cassettes, ovarian neoplasms. 7.22
  Film distribution service. 4.75
  Films, 8 mm. 37.14, 43.12
  Radio broadcasts, heart disease, cancer, stroke. . . . 43.12
  Radio network, two-way. 4.54, 28.12, 29.32, 40.12, 43.12, 45.22

  Telelectures. 21.16, 22.14, 28.122, 31.32
  Telephone, consultation to local physicians. 40.14
  Telephone, EKG transmission. 3.12, 9.22, 28.92, 43.12, 43.13

  Telephone network, two-way. . . . 22.13, 28.92, 37.14, 45.22
  Television. 1.14, 2.14, 4.32, 5.12, 7.12, 8.24, 9.12, 9.24, 12.12, 14.14, 16.12, 18.14, 19.14, 19.24, 21.14, 23.22, 28.122, 34.34, 38.12, 38.32, 39.14, 39.22, 40.13, 40.14, 42.14, 43.12, 45.12, 45.13, 45.14, 45.24

  Television, cancer conference. 25.13
  Television, cardiology research conference. 7.12
  Television, chemistry instruction. 2.14
  Television, color. 5.12, 8.24
  Television, interview self-assessment. 19.24
  Television, medical networks. 4.32, 5.12, 9.12. 12.12, 16.12, 23.22, 28.122, 40.13, 43.12, 45.12, 45.14

  Television, psychiatric consultation. 25.12
  Television, psychiatric interviews. 21.14
  Television, psychiatric teaching. 39.22
  Television, slow-scan. 45.24
  Television, trauma care. 14.14
  Videotape. 4.32, 5.12, 9.12, 12.12, 14.14, 16.12, 21.14, 28.122, 38.22, 39.22, 40.13, 40.14, 42.14, 43.12, 45.12, 45.13

  Videotape catalog, computerized. 42.14
  Videotapes, cancer care. 45.13

General Index (Cont.)

Biological Sciences Communication Project. 7.24

Biomedical Communication Graduate Program. 16.34

Biomedical information flow. 7.24

Blood test analyses, automated. 15.14

Burn facility evaluation. 19.14

Cancer conference, televised. 25.13

Cancer Detection Center, evaluation. 14.12

Cancer of the cervix, radiation dosimetry. 22.32

Cancer of the ovary, film cassettes. 7.22

Cancer patient care, videotapes. 45.13

Cancer radiotherapy, computer-assisted. 38.14

Cancer registry, computerized. 3.12, 8.24, 38.14

Cancer therapy. 36.12, 45.12

Cardiac failure diagnosis, standard language. 34.14

Cardiologic education. 8.25, 11.12

Cardiology research conferences, televised. 7.12

Cardiology screening units, computerized. 13.14

Cardiovascular studies, computerized. 40.14

Central community registry. 36.12

Chemistry, television instruction. 2.14

Child and Youth Study Program. 28.74

Children with heart problems. 13.14

Communicable diseases. 9.24

General Index (Cont.)

Communication and information
exchange service (CIES). 40.13

Communication network. 1.14

Communication research unit. 22.14

Communications mechanisms for medical education. 14.14

Community health education system. 7.12

Community health model. 34.54

Community health program. 29.22

Community health service program. 22.12

Community health services. 29.24

Community hospital bedside teaching program. 18.22

Community hospitals, intramural teaching centers. 4.72

Computer-assisted instruction
  Anatomy. 31.34
  Biochemistry. 31.34
  Dietetics. 31.34
  Heart disease (arrythmias). 43.14
  Histology. 31.34
  Interviews. 19.24
  Surgery. 4.32
  Tutorial Evaluation System. 31.34

Computer facilities. 1.14, 1.15, 4.64, 5.14,
8.14, 8.24, 8.25, 12.14,
13.14, 16.32, 17.14, 17.24, 18.14,
20.14, 22.14, 25.13, 28.84, 29.24,
31.14, 32.14, 34.34, 34.64. 38.32,
38.34, 40.14, 41.14, 43.14, 45.24

Computer instruction for medical students. 25.14

Computer monitoring, expectant mothers. 11.24

Continuing education. 1.12, 4.54, 4.72, 4.82, 5.12, 7.12, 7.14, 7.22, 7.24, 9.12, 11.12, 14.12, 17.24, 18.12, 18.22, 22.12, 22.13, 22.14, 22.22, 22.24, 22.34, 23.14, 23.24, 25.12, 28.12, 28.85, 28.122, 29.32, 31.22, 33.12, 34.34, 34.74, 37.14, 38.12, 38.22, 38.32, 39.14, 40.12, 40.13, 43.12, 43.13, 45.12, 45.13

Coronary care. 1.14, 1.15, 3.12, 14.12, 22.13, 25.12, 28.12, 32.14, 38.32, 43.13, 45.12

Costs of medical care. 22.32

Diagnosis, computerized. 29.24

Drug efficacy, information use. 8.14, 34.24, 42.14

Drug Information Center. 4.52

Drug information, computerized. 4.24, 23.26

Drug information system. 19.12

Drug prescribing, computerized analysis. 4.74

Drug system (unit dose). 15.14

EKG analysis, computerized. 3.12, 4.75, 22.13, 22.14

EKG diagnosis of arrythmias (CAI). 43.14

EKG transmission, telephone. 3.12, 9.22, 28.92, 43.12, 43.13

Engineering interplay with biology and medicine. 17.14, 31.34, 42.24, 43.15

Environmental Health Analysis Center. 31.24

Expectant mothers, computer monitoring. 11.24

Extended patient care. 7.22

General Index (Cont.)

External cardio-pulmonary resuscitation. 26.12

Family Physician (FP). 43.14

Film cassettes, ovarian neoplasms. 7.22

Film distribution service. 4.75

Films, 8mm. 37.14, 43.12

Glossary. 100.11

Group medical practice. 7.12

Group practice evaluation. 18.24, 29.22

Group practice plans. 29.14

Health care research program. 43.14

Health data bank, statewide. 14.14, 21.14

Health information system,
  demonstration model. 13.14

Health Manpower Training. 45.12

Health Services Research Center 18.24, 4.34, 11.42, 29.34

Health Services Planning. 17.12

Heart Disease: (see also Heart Disease, Cancer & Stroke)
  Cardiac failure diagnosis, standard language. 34.14
  Coronary care. 1.14, 1.15, 3.12,
  14.12, 22.13, 25.12, 28.12,
  32.14, 38.32, 43.13, 45.12

  EKG analysis, computerized 3.12, 4.75, 22.13, 22.14
  EKG diagnosis of arrhythmias (CAI). 43.14
  EKG transmission, telephone. 3.12, 9.22,
  28.92, 43.12, 43.13
  Education. 8.25, 11.12
  External cardiopulmonary resuscitation. 26.12

Heart Disease: (cont.)
  In children. 13.14
  Myocardial infarct registry. 28.85
  Nurses as pediatric clinical associates. 13.14
  Research conferences, televised. 7.12
  Screening units, computerized. 13.14
  Studies, computerized. 40.14

Heart disease, cancer, and stroke, audio-visuals. 7.24

Heart disease, cancer, and stroke, pamphlets. 22.14

Heart disease, cancer, and stroke, postgraduate education, dentists. 19.15

Heart disease, cancer, and stroke, postgraduate education, nurses. 19.15

Heart disease, cancer, and stroke, postgraduate education, physicians. 33.12

Heart disease, cancer, and stroke, radio broadcasts. 43.12

Hemodialysis Education. 25.13

Hospital information systems, on-line. 16.34

Hospital management, information center. 19.15

Hospital planning. 7.12, 36.12

Information coordinators. 28.12, 28.14

Information environments of medical researchers. 11.44

Information exchange service. 40.13

Information flow, biomedical. 7.24

Information flow to physicians. 19.14

General Index (Cont.)

Information gap between physician and library. 28.44

Information in medicine. 29.22

Information on RMP activities. 18.12, 28.14, 40.13

Information requirements of practicing physicians. 45.24

Information search behavior of physicians. 11.44

Information utilization. 19.12

Input-outputs, development. 4.64

Input-output device evaluation. 16.34

Interview self-assessment technique. 19.24

Lab record and billings, computerized. 1.14, 28.84

Learning resource centers. 28.12, 28.84, 29.24

Learning theory course. 38.14

Medicaid. 29.14

Medical facilities list. 39.24

Medical information services, computerized. 8.25

Medical libraries, activity reports. . . . 19.34, 22.34

Medical libraries, bibliographic reference services. 29.22

Medical libraries, biomedical communications network. 28.124

Medical libraries, cooperative system. 4.52

Medical libraries, educational needs in medical librarianship and health sciences information. 31.15

General Index (Cont.)

Medical libraries, facsimile. 11.44

Medical libraries, hospital library improvement. 31.24, 38.32

Medical libraries, hospital regional system. 3.12

Medical libraries, information gap between them and physician. 28.44

Medical libraries, interlibrary loan analysis. 15.24

Medical libraries, learning resources center. 29.24

Medical libraries, librarians meetings. 45.13

Medical libraries, measuring usage. 4.74

Medical libraries, non-print materials. 7.24

Medical libraries, reference questions. 12.12, 23.22

Medical libraries, regional. 4.32, 31.14

Medical libraries, rotating survey. 45.25

Medical libraries, serials control system, computer-based. 4.34

Medical libraries, serial holdings. 12.14

Medical libraries, stroke reference service. 40.12

Medical libraries, telecopier. 3.12

Medical libraries, training of hospital librarians. 34.62, 45.13

Medical libraries, training of medical librarians. 3.12, 31.15

Medical libraries, twenty-four-hour services. 3.12, 23.22, 24.12

Medical libraries, TWX network. 29.12, 29.23

Medical libraries, union lists. 3.12, 28.124

Medical libraries, Xerox copies. . . 9.12, 9.22, 23.22, 34.62

Medical practice studies. 29.34

Medical records, computerized. 31.14, 38.24

Medicare. 29.14

MEDLAB. 40.14

Mental retardation information
  and resources center. 7.14

Menu planning, computerized. 16.32

Model health community. 14.12

Myocardial infarct registry. 28.85

Nurses as pediatric clinical associates. 13.14

Outpatient records, computer formatting. 1.14

Parkinson's Disease Information Center. 28.24

Patient medical history system,
  computer based. 45.25

Periodic health examination. 34.34

Pharmaceutical detail men. 28.14

Physiological data computerized. 4.74, 40.12

Poison control information, computerized. 34.14

Poison control information, telephone. 28.92

Population data bank. 11.34

General Index (Cont.)

Prepaid medical care program. 18.25

Programmed learning. 40.12

Programmed materials, clearinghouse. 28.85

Psychiatric consultation, closed circuit TV. 25.12

Pulmonary diseases, comprehensive
  care teaching. 7.12

Radio broadcasts, heart disease, cancer,
  and stroke. 43.12

Radio network, two way. 4.54, 28.12, 29.32,
  40.12, 43.12, 45.22

Regional Medical Programs, activity
  information. 28.12, 28.14, 40.13

Science courses, basic. 5.14

Screening, multiphasic. 22.12, 28.82,
  29.24, 38.14, 40.14

Self-instruction. 14.14, 19.24, 28.84, 43.14

Shock research. 4.74

Shock, videotapes for nurses. 45.12

Space biology, information center. 7.24

Specialized information centers
  Drugs. 4.52
  Environmental health. 31.24
  Hospital management. 19.15
  Mental retardation. 7.14
  Parkinson's Disease. 28.24
  Space biology. 7.24
  Vision. 18.22

Stroke, comprehensive patient care. 7.24

Stroke, diagnosis, computer fact bank. 22.12

Stroke, evaluating patient care. 7.14

Stroke, follow-up and surveillance. 7.14

Stroke, information reference service. 40.12

Stroke, regional center. 7.24

Study patient activity recording evaluation (SPARE). 38.24

Surgical risk prediction. 39.14

Technologist training. 38.34

Telelectures. 21.16, 22.14, 28.122, 31.32

Telephone, consultation to local physicians. 40.14

Telephone, EKG transmission. 3.12, 9.22, 28.92, 43.12, 43.13

Television. 1.14,2.14, 4.32, 5.12, 7.12, 8.24, 9.12, 9.24, 12.12,14.14, 16.12, 18.14, 19.14, 19.24, 21.14, 23.22, 28.122, 34.34, 38.12, 38.32, 39.14, 39.22, 40.13, 40.14, 42.14, 43.12, 45.12, 45.13, 45.14, 45.24

Television broadcasters, Association of Medical. 40.14

Television, cancer conference. 25.13

Television, cardiology research conference. 7.12

Television, chemistry instruction. 2.14

Television, color. 5.12, 8.24

Television, interview self-assessment. 19.24

General Index (Cont.)

Television, medical networks. 4.32, 5.12, 9.12, 12.12, 16.12, 23.22, 28.122, 40.13, 43.12, 45.12, 45.14

Television, psychiatric consultation. 25.12

Television, psychiatric interviews. 21.14

Television, psychiatric teaching. 39.22

Television, slow-scan. 45.24

Television, trauma care. 14.14

Text on tape. 39.22

Tissue typing. 45.12

Toxicology information. 31.24

Trauma care, videotaped. 14.14

Tuberculosis control, computerized. 9.24

Tutorial Evaluation System (TES). 31.34

Videotape. 4.32, 5.12, 9.12, 12.12, 14.14, 16.12, 21.14, 28.122, 38.32, 39.22, 40.13, 40.14, 42.14, 43.12, 45.12, 45.13

Videotape catalog, computerized. 42.14

Videotapes, cancer care. 45.13

Vision information center. 18.22

INDEX TO COMMON CARRIER SERVICES

(see also GENERAL INDEX)

ACU (Automatic Calling Unit). 100.11

ASR. 9.16

Broad Band Lines. 39.16, 43.16, 100.11

Baud. 100.11

Bit. 100.11

Carrier Systems. 100.11

Channel. 100.11

Centrex. 1.16, 16.16, 18.16, 18.26,
25.16, 27.16, 29.36, 34.16, 38.36

Closed Circuit TV (CCTV). 4.56, 4.86, 5.16, 7.26, 8.16,
8.24, 9.16, 9.26, 16.16, 23.22,
27.16, 28.16, 28.106, 31.36, 38.26,
38.36, 39.16, 39.26, 40.16, 42.16,
42.26, 43.16, 44.16, 45.16, 45.26

Coax. 18.26

Computer to Terminal Tie Line. 8.26

Control Switching Arrangement. 34.76, 42.16, 42.26

Data Sets. 8.16, 15.16, 100.12

Data Speed. 100.12

Dataphone. 19.36, 27.16, 28.16, 27.26,
28.96, 31.16, 38.16, 45.26, 100.12

Direct Distant Dialing. 100.12

Duplex. 100.12

ETV. 8.16, 9.16, 11.36,
12.16, 14.16, 15.16, 16.16, 16.36,
17.26, 19.16, 20.16, 28.96, 31.16,
31.36, 37.16, 39.26, 41.16, 45.16

INDEX TO COMMON CARRIER SERVICES (CONT'D)

Exchange 100.13

Facsimile (Fax) 100.13

Federal tele-communications system lines 7.36

Foreign Exchange 1.16, 4.66, 4.86, 9.26, 12.16, 14.16, 15.16, 19.16, 28.126, 29.26. 34/36, 39.26, 45.26, 100.13

Grade Lines 28.126

Half Duplex 100.13

Holding Time 100.13

Interface 100.13

Interstate WATS . . . . 3.16, 4.26 , 4.76, 8.16, 33.16

Intra-state WATS 3.16, 4.26, 4.76, 8.16, 9.26, 11.36, 12.16, 14.16, 15.16, 16.16, 21.16, 22.16, 23.26, 25.16, 28.96, 33.16, 37.16, 39.26, 44.16, 45.26

Line Switching 100.14

Local Channel 100.14

Medical Education Voice Network 12.16

Message Switching 100.14

Microwave 5.14, 23.22, 28.16, 39.16, 40.16, 100.14

Modem 100.14

Multiplexing 100.14

Multipoint Circuit 100.14

Operating Time 100.15

Perforator 100.15

INDEX TO COMMON CARRIER SERVICES (CONT'D)

Picturephone. 100.15

Private Lines. 3.16, 5.16, 12.16, 14.16, 21.16, 22.16, 29.36, 37.16, 38.16, 38.26, 38.36, 40.16, 42.26, 43.16, 100.15

Radio Station. 28.16, 31.36

Reperforator. 100.15

Selectric Calling. 100.15

Station. 100.15

TV Lines. 29.36

TWX. 4.56, 5.16, 8.16, 8.26, 11.36, 12.16, 15.26, 16.16, 18.26, 27.16, 28.86, 28.96,28.106, 29.16, 29.23, 31.36, 33.16, 34.66, 38.36, 40.16, 41.16, 42.16, 43.16, 39.26, 100.16

Tandem Network. 33.16

Tariff. 100.16

Teletype. 9.16, 28.86, 34.16, 42.26, 45.26, 100.16

Telex. 29.23

Telpak. 1.16, 4.56, 11.36, 12.16, 15.16, 16.16, 17.26, 19.16, 33.16, 42.16, 43.16, 45.26, 100.16

Tie Lines. 1.16, 4.56, 6.26, 8.16, 11.36, 15.16, 27.16, 28.66 28.106, 29.36, 33.16, 34.36, 34.66, 39.46. 44.16, 45.26, 100.16

Touch Tone. 100.17

Two-Way TV. 4.26, 18.26

Voice Grade Channel. 100.17

INDEX TO COMMON CARRIER SERVICES (CONT'D)

WATS. 28.36, 32.16, 37.16, 38.36, 40.16, 44.16, 45.26, 100.17

Wide Band. 29.26, 29.36

PREFACE

This document describes the common carrier services and extramural activities of medical schools within the United States. The purpose of this document is to serve analysts and designers of the proposed Biomedical Communications Network (BCN) of the National Library of Medicine by summarizing current capabilities and facilities of medical schools in areas of activity impinging on the concept and role of the BCN.

The Technical Development Plan (TDP) of the Associate Director Research and Development, NLM, dated June 1968, served as a guide to this effort. This document was also prepared with the knowledge of Public Law 90-456 which authorized the formal establishment of the Lister Hill National Center for Biomedical Communications.

Only medical schools are listed in this document for the reason that accreditation standards have been established and medical schools can be listed readily. Medical schools also, during part or all of every physician's career, are resource or service nodes to the information used in medical education, research, and services.

Medical schools are listed geographically by state in the sequence that they appear in the 1967-68 AAMC Directory Index. The medical schools in Beirut, Lebanon; and San Juan, Puerto Rico, are omitted from this report, although they are listed in the Directory.

Medical school data were extracted from the "AAMC Directory"; medical library data from the "25th Edition, American Library Directory, 1966-67; and resident and physician population data from the AMA publication, "Distribution of Physicians, Hospitals, and Hospital Beds in the U.S., 1966."

Community action programs are defined as those extramural library, specialized information, specialized education, and audio and audio-visual offerings to the non-academic members of that institution. These data were obtained from personal contacts with physicians and allied professionals, site surveys, reports from EDUCOM institutional representatives, proposals to federal and private non-profit organizations, grants, contracts, and the trade and professional literature.

Summaries of common carrier services were provided by James Hughes of AT&T. This effort involved locating and contacting the responsible account representative for each medical school. The data includes actual billings by the local telephone company to the University (or to the medical school if the medical school account is carried separately), the representative's knowledge of other communications services at the university, and those proposed services in which the representative was involved. Grant requests to Extramural Programs of NLM for medical library assistance were not used as a source of data for this report.

Regional Medical Library programs and MEDLARS centers are not reported in this document because data on these programs are available through prime contracting sources at the Library.

Much of the data listed under community action programs are proprietary to the medical school or the funding agency. This report is administratively confidential to the National Library of Medicine and those contractors with responsibilities for the implementation of the Technical Development Plan.

It is hoped that it will be possible to update this compendium from time to time. Users wishing to contribute or receive updated materials should write to EDUCOM, 9650 Rockville Pike, Bethesda, Maryland 20014.

Medical College of Alabama
Birmingham, Alabama 35233

Type: State supported

Enrollment: 320 (67-68)

Number of Medical Schools in Alabama: 1

Clinical Facilities: University of Alabama Hospitals and Clinics; Spain Rehabilitation Center; Children's Hospital; the Crippled Children's Clinic and Hospital; and the Veterans Administration Hospital

Medical Library: Staff, 15 (6 prof); volumes, 90,000; pamphlets, 4,808; 1965 income, $127,877.

Personnel:

Dean.	S. Richardson Hill, Jr., M.D.
Audio-Visual Coordinator. . . .	John M. Bruhn, Ph.D.
Division of Continuing Medical Education.	Margaret S. Klapper, M.D.
Office of Learning Resources Director	John J. Sharry, D.M.D.
Medical Library Director. . . .	Mrs. Sarah C. Brown

Statewide Statistics:

Total Resident Population . . .	3,449,900
Non-Federal Physician Population	2,781
Counties.	67
Hospitals	119
Hospital Beds	11,309

Community Action Programs:

Dr. Margaret S. Klapper. Associate Dean and Director. Division of Continuing Medical Education. reported that the Medical College. the School of Dentistry. the School of Nursing. and the University Hospital all have educational offerings designed for practicing physicians and allied personnel. These continuing education activities are not coordinated in any one school. The Medical College's programs in physician education include:

1. Hospital seminar programs - twenty-eight 4 to 5 hour seminars held in various hospital districts of the state;

2. Mobile General Hospital - the Department of Medicine supplies one teaching day per month to the Mobile General Hospital;

3. Tuskegee Veterans Hospital - the Medical College offers three teaching programs per year at Tuskegee. each program conducted by two or three faculty members for two days; and

4. The Division of Continuing Medical Education meets regularly with the Medical Association of the State of Alabama. the Alabama State Medical Association, the Alabama Academy of General Practice. and the Alabama Heart Association for planning scientific programs in medicine and health.

Related Activities:

The computer facility provides computer support to (1) The Research Computer Laboratory, (2) the hospital and business office computer groups and (3) the cardiovascular computer support group. An IBM 7040 (which has recently been replaced) is used for research operations. An IBM 1410 was used for the hospital and business office operations, and an IBM 1800 to monitor open-heart surgery patients in intensive care. Clinical laboratory computer data are used to compile patient lab records and billings. These data are also used to compute normal values and various biostatistical indications of disease. Outpatient records were being formatted for the computer in late 1967.

The University is a member of the Council of Regional Planning Directors and Administrators which was established in January, 1968, for the purpose of setting up a regional and statewide communication network between major health, or directly related, programs. In addition to representatives from the University, directors and administrators from the following programs are members of the Council: Comprehensive Health Planning, Comprehensive Neighborhood Health Center Program, Model City Program, Statewide Planning for Vocational Rehabilitation, Alabama RMP, VA, State Board of Health, Appalachian Regional Program, Hill-Burton, Medical Association of the State of Alabama, Alabama State Hospital Association, Federal Programs Coordinating Committee, and the Tuskegee Institute.

John Sharry, D.M.D., was recently appointed as the director of the newly-formed Office of Learning Resources. The OLR will centralize all television, film, and audiovisual activities at the University. The Medical College received a grant from the Markle Foundation to enable the University to go into television production within the next year.

Related Activities:

The Medical College has a remote terminal at the Texas Central Research Computer Facility in Houston, Texas. Equipment on campus includes an IBM 360/50, IBM 7040, IBM 1800 (intensive care), SDS Sigma 7/Sigma 2, PDP 7, and 2 PDP 8's. An IBM 360/50 will replace the IBM 7040. A second IBM 1800 and three more PDP 8's are in process of acquisition. Joseph Fontana is the Director of the Computer Facility.

Common Carrier Services (1968):

Two foreign exchange services. One Full Period tie line between Birmingham and Tuscaloosa, open at Tuscaloosa. Intra-state Telpak "A". Extension of tie line into Huntsville. Centrex with touch tone planned for 1969 in Birmingham.

The University of Arizona College of Medicine
Tucson, Arizona 85721

Type: State supported

Enrollment: 32 (67-68)

Number of Medical Schools in Arizona: 1

Clinical Facilities: University of Arizona Hospital; and U.S. Veterans Administration Hospital.

Medical Library: Data not recorded

Personnel:

Dean. . . . . Merlin K. DuVal, Jr., M.D.
Medical Library Director. . David Bishop, M.S.L.S.

Statewide Statistics:

Total Resident Population	1,640,100
Non-Federal Physician Population	1,997
Counties.	14
Hospitals	56
Hospital Beds	5,343

Related Activities:

Some experiments in the use of television techniques in chemistry instruction are now being conducted at the University. John Palmer, M.D., Ph.D., is the Director of the Multidiscipline Laboratories. The Multidiscipline Laboratories are quite similar to the Unit Teaching Laboratories at the University of Colorado, i.e., the basic teaching facility is a four-student room with complete wet and dry laboratory facilities. Dr. DuVal, the Dean of the College of Medicine, was the Director of the Library Study Committee of the Association of American Medical Colleges. The Committee prepared a report to the National Library of Medicine, dated January 1967, entitled, "The Health Science Library: Its Role in Education for the Health Professions."

The University of Arkansas School of Medicine
Little Rock, Arkansas 72201

Type: State supported

Enrollment: 385 (67-68)

Number of Medical Schools in Arkansas: 1

Clinical Facilities: University Hospital; two Veterans Administration Hospitals; and the State Hospital for Nervous and Mental Diseases.

Medical Library: Staff, 11; volumes, 55,000.

Personnel:

Dean.	Winston K. Shorey, M.D.
Director of Continuing Medical Education.	Roger B. Bost, M.D.
Medical Library Director. . .	Miss Marie Harvin

Statewide Statistics:

Total Resident Population	1,906,300
Non-Federal Physician Population	1,694
Counties.	64
Hospitals	74
Hospital Beds	6,549

Community Action Programs:

In mid-1968 the Arkansas Regional Medical Program submitted operational grant requests for the following programs which involved the University of Arkansas School of Medicine.

1. The establishment of a regional hospital medical library system, a three-year program for the development of library collections in various hospitals, for the training of medical librarians, and for the development of union lists and catalog monographs as proposed by the University of Arkansas medical library. The University also proposed that the medical library would provide twenty-four hour library services to all physicians in the State via inward WATS.

2. It was proposed that a study team should examine the utilization of computers for the care and treatment of cardiac patients. Computer EKG analyses via telephone lines would be investigated and the feasibility of this technique considered for application to the State of Arkansas.

3. A computerized tumor registry for Arkansas was proposed using the "Central Cancer Registry" as a basis for the registry. The Central Cancer Registry is now located at the University of Arkansas and is operated by the State Cancer Commission.

The Medical Center installed a Xerox Magnavox Telecopier on 1 March 1968. It is connected to the University of Arkansas General Library in Fayetteville, 250 miles away. No data available on volume and frequency of transmissions. No formal agreement required between participating libraries because both parties are members of the University system.

The University of Arkansas School of Medicine (Cont.)

Common Carrier Services (1968):

Two outward intra-state WATS. One outward interstate WATS, zone 5. Thirty-two on-campus private lines. ETV on closed circuits, capable of receiving transmissions from New York.

University of California, Davis School of Medicine
Davis, California 95616

Type and Enrollment: Data not recorded

Number of Medical Schools in California: 8

Clinical Facilities: Data not recorded

Medical Library: Volumes, 40,000.

Personnel:

Dean	C. John Tupper, M.D.
Medical Library Director	J. Richard Blanchard

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties	58
Hospitals	496
Hospital Beds	62,115

University of California, Irvine California College of Medicine
Los Angeles, California 90031

Type: State, nonprofit

Enrollment: 290 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: Orange County General Hospital, Santa Ana; Los Angeles County General Hospital, Unit II; Veterans Administration Hospital, Long Beach; White Memorial Medical Center, Los Angeles; Memorial Hospital of Long Beach, and Metropolitan State Hospital, Norwalk.

Medical Library: Volumes, 98,000; Income 1965-66, $375,618.

Personnel:

Dean.	Warren L. Bostick, M.D.
Medical Library Director. . . .	John E. Smith

Statewide Statistics:

Total Resident Population . . .	18,880,100
Non-Federal Physician Population	33,165
Counties.	58
Hospitals	496
Hospital Beds	62,115

University of California, Irvine, California (Cont.)

Related Activities:

Dr. Robert S. Peters, Assistant Chief of Medicine of the County of Fresno General Hospital, reported that Fresno was considering a pilot project to provide an outline of drug information that will be retrievable on a random access basis from an IBM 360 computer located at the University in Irvine, California. A proposal for the transmission of drug data to physicians in hospitals was being planned for submittal to the Area IV California Regional Medical Program.

University of California, Irvine, California (Cont.)

Common Carrier Services (1968):

Interstate outward WATS, zone 6 (10 hours of measured time). Southern California WATS (basic purchase 125 hours per month). One intrastate outward WATS (15 hours of measured time). Two-way TV access to Channel 28.

UCLA School of Medicine
Los Angeles, California 90024

Type: State supported

Enrollment: 337 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: University Hospital; Los Angeles County Harbor General Hospital in Torrance; Veterans Administration Hospital in Los Angeles; and the State Department of Mental Hygiene Hospitals.

Medical Library: Volumes, 2,197,175

Personnel:

Dean	Sherman M. Mellinkoff, M.D.
Associate Dean of Continuing Education	Donald F. Brayton, M.D.
Medical Library Director	Robert Vosper

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties	58
Hospitals	496
Hospital Beds	62,115

Community Action Programs:

UCLA, early in 1968, proposed to western medical librarians that the UCLA Biomedical Library act as the regional medical library for the west coast. The northwest region already expressed agreement with this suggestion. The northern California groups asked for additional information on regional library criteria (and how UCLA meets these criteria) before deciding on the proposal.

Members of the Department of Surgery developed a CAI program to help fourth-year students develop clinical decision-making abilities in surgery. Students at UCLA used an IBM 1050 typewriter station to gain access to an IBM 1410 at the University of California, Irvine, where CAI is under intensive development in non-medical education. Experiments are also being conducted with an IBM 2250, Graphic Display Unit connected to a 360 at the UCLA Health Sciences Facility.

The California Medical Television Network (CMTN), the focus of medical television in California, will be expanded. The purpose of the expansion is to allow the network to act as the production and distribution facility for all medical institutions in the southwestern United States. The object of the expansion is to disseminate information on the latest methods, concepts and research in medicine to urban and rural communities. The activity will be conducted under the direction of personnel from UCLA-TV. KCET will be the central broadcasting facility. Six other institutions will participate in the production of videotape and other audio-visual materials.

UCLA School of Medicine (Cont.)

Related Activities:

In June. 1968. the University of California, Los Angeles. School of Public Health received the first increment of a three-year grant from the National Center for Health Services Research and Development (NCHSRD) for the purpose of establishing a California Health Services Research Center. UCLA is one of the seven such research centers established in 1968. The director is Dr. Lester Breslow. Professor of Health Services Administration. On this grant. UCLA will be the focus of research groups located at UC Berkeley. UC Los Angeles. UC San Francisco and UC San Diego. the Los Angeles County Department of Hospitals and the Los Angeles County Department of Health. The research effort of the Center will be directed to the development, testing and utilization of criteria for measuring the outcomes of medical and health practices. The research groups will be looking at defined population groups such as labor. government employees. welfare recipients. etc. The estimated level of funding for three years is $902,000.

The UCLA Biomedical Library wrote an IBM 1410 program for a computer-based serials control system. The program is presently being adapted to an IBM 360. As of April 1968. the serials control program was being run both manually and on the computer. When the computer program is completely debugged. manual operations will be discontinued. Serials control is based on publication dates. A master record on the publication pattern generates check-in cards for the next expected issue of that particular publication.

UCLA School of Medicine (Cont.)

Common Carrier Services (1968):

Data not available

University of California, San Diego School of Medicine
LaJolla, California 92087

Type: State supported

Enrollment: 68 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: San Diego County-University Hospital (operated by the University of California).

Medical Library: Volumes, 60,000.

Personnel:

Dean	Clifford Grobstein, Ph.D.
Medical Library Director	Melvin J. Voigt

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties	58
Hospitals	496
Hospital Beds	62,115

The University of California School of Medicine
San Francisco, California 94122

Type: State supported

Enrollment: 527 predoctoral medical students
509 postdoctoral students
(67-68)

Number of Medical Schools in California: 8

Clinical Facilities: University of California Hospitals, including Herbert C. Moffitt Hospital and University of California Hospital; University of California Outpatient Hospital; and Veterans Administration Hospital.

Medical Library: Volumes, 258,877.

Personnel:

Dean	Stuart C. Cullen, M.D.
Audio-Visual Coordinator	Irving R. Merrill, Ph.D.
Dean of Continuing Medical Education	Seymour M. Farber, M.D.
Medical Library Director	John B. de C.M. Saunders
Administrative Librarian	Mrs. Jeannette Yaezell

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties	58
Hospitals	496
Hospital Beds	62,115

Community Action Programs:

The School of Pharmacy and the Medical Library are collaborating on an operational concept known as the Drug Information Center (DIC). The purpose of the DIC is to extend the education and experience of the pharmacist to the patient's bedside. The DIC facility is located in the medical library. It is equipped with references, compendia, formulary, etc., provided by the librarians. The Center is staffed for approximately 60 hours a week by pharmacy faculty and senior pharmacy students. The DIC is connected to all floors of the Moffitt Hospital by telephone and telewriter. The files of the DIC, in addition to reference material on drugs and medications, include selected citations from scientific journals, portions of clinical records having to do with medication therapy, and an especially prepared guide to reference material. The concept of the DIC includes pharmacy followup of recommended medication therapy. This same concept of "Clinical Pharmacology" is now being tried in a general hospital in Long Beach, California.

The San Francisco area (San Francisco to the northern border) Regional Medical Program sent out a request for proposal in the third quarter of 1968 for the purpose of studying the need for a cooperative medical library system in the northern RMP area. Dr. Elliot Rapaport of UCSF is the RMP area coordinator. The study period is estimated to extend over four to six months. The study will include a determination of the needs of health professionals and the facilities and capabilities of health science library resources available to them.

Related Activities:

Dr. Seymour Farber is the Dean of Educational Services and Director of Continuing Education for the University of California, San Francisco. Dr. Farber, a long-time educator in continuing education in medicine, has instituted a vigorous series of medical lectures for physicians in the San Francisco area. The University offers approximately 160 short-term courses in medicine and health annually to an estimated audience of 20,000. Many of the lectures are recorded and played on Voice of America. Up through 1967, AM-FM broadcasts on medical topics were regularly scheduled for the northern California medical community. The broadcasts, which consisted of a one-hour lecture once a week by the medical school faculty, were supported by four drug manufacturers. The hour lecture was followed by a telephone question/answer period.

The University of California School of Medicine (Cont.)

Common Carrier Services (1968):

Tie lines to six major university campuses. TWX message networks. Closed circuit TV to the University hospital and Oakland. Shared user of the state Telpak.

Loma Linda University School of Medicine
Loma Linda, California 92354

Type: Privately endowed

Enrollment: 340 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: Loma Linda University Hospital; Riverside General Hospital; San Bernardino County Hospital; and Patton State Hospital.

Medical Library: Volumes, 100,000; Income, (65-66) $142,500.

Personnel:

Dean.	David B. Hinshaw, M.D.
Director of Continuing Medical Education.	John E. Peterson, M.D.
Medical Library Director. . . .	George V. Summers

Statewide Statistics:

Total Resident Population . . .	18,880,100
Non-Federal Physician Population	33,165
Counties.	58
Hospitals	496
Hospital Beds	62,115

Related Activities:

Ivan Nielsen, Ph.D., Professor of Physiology and Biophysics. has been developing instrumentation for a number of years to be used in medical research. He is an advocate of very low cost, crt display devices for computer interaction. A recent proposal to the California Committee on RMP requested support on the further development of very low cost I/O's to be used with computers.

The University has two computer systems. The scientific computer is linked to the computer at the UCLA medical computer center by microwave. The second computer is used exclusively at Loma Linda. Some models are programmed into the second for student instruction.

Loma Linda University School of Medicine (Cont.)

Common Carrier Services (1968):

Ten foreign exchanges to Riverside. Thirty foreign exchanges to San Bernardino.

The University of Southern California School of Medicine
Los Angeles, California 90033

Type: Privately endowed

Enrollment: 280 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: The Los Angeles County Hospital; the Children's Hospital; Barlow Sanatorium; The Orthopedic Hospital, Rancho Los Amigos Hospital; Estelle Doheny Eye Foundation; Good Hope Medical Foundation; Los Angeles Child Guidance Clinic; and Suicide Prevention Center.

Medical Library: Volumes, 51,179.

Personnel:

Dean.	Roger O. Egeberg, M.D.
Associate Dean Postgraduate Medical Education.	Phil R. Manning, M.D.
Medical Library Director. . .	Dr. Vilma Proctor

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties.	58
Hospitals	496
Hospital Beds	62,115

The University of Southern California School of Medicine (Cont.)

Community Action Programs:

The University of Southern California School of Medicine has had a Division of Continuing Education since 1946. Phil R. Manning, M.D., Associate Dean, Postgraduate Medical Education, reported that between 50 and 70 short-term refresher courses primarily for the practicing physician are given each year. Dr. Manning also reported that there is a grant application pending with RMP to develop community hospitals into intermural teaching centers.

Related Activities:

The Shock Research Unit, under the direction of M. H. Weil, was established in 1963 for the purpose of rendering intensive care, studying underlying mechanisms of the disease process, and developing new techniques for evaluating seriously ill patients. A sigma V computer is used to analyze physiological data from critically ill patients at real time rates. Data is displayed via signal conditioning equipment on bedside oscilloscopes. The signal conditioners also output to a multiplexer and A/D converter which interface with a computer channel. The computer performs the real time analysis of signals. Display equipment include crt, keyboard displays, and a digital plotter.

The University of Southern California School of Medicine is presently in the process of writing a medical library proposal to the California RMP. Dr. John S. Lloyd, Chief, Program of Evaluation in the School of Medicine, has been looking into methods for measuring library usage.

The Department of Pharmacology is currently entering drug prescriptions into a Fortran processable disk file. Patient files are now being collected. The analytic program to evaluate the effectiveness of prescriptions is now being written. The Department's studies are divided into outpatient drug studies and inpatient studies. In the outpatient study, all prescriptions are entered into the computer via crt terminals located in the pharmacies. Labels are generated for the pharmacist by remote printers. Over 650,000 prescriptions are being processed annually. The computer effort involves an analysis of inappropriate prescriptions. In the inpatient studies, data on a 50 bed medical ward are being entered into a computer via a 1092-93 terminal with crt display for verification and recall of data. The following data are being entered into the computer for use by the physician and the nursing staff in caring for patients:

1. Patient identification.
2. All drug orders.

The University of Southern California School of Medicine (Cont.)

Related Activities: 2.

3. Screening laboratory test results for adverse drug reactions.

4. Electrocardiographic interpretations.

5. Nursing team monitoring data for adverse reactions.

6. Physician's comments.

The University of Southern California has been appointed service organization for University Film Distributors, a cooperative intra-university film distribution service of the University Film Foundation. As service organization, USC will acquire, catalog, reproduce, promote, and distribute films for and to other universities. Cataloging will be based on the data processing techniques developed by USC in 1959 by Glen McMurry of the USC Cinema Department Film Distribution Section.

The University of Southern California School of Medicine (Cont.)

Common Carrier Services (1968):

Access to one inter-state outward WATS, zone 6. Southern California WATS and 15 hours of California state-wide outward WATS.

Stanford University School of Medicine
Palo Alto, California 94305

Type: Privately endowed

Enrollment: 248 (67-68)

Number of Medical Schools in California: 8

Clinical Facilities: Palo Alto-Stanford Hospital Center and Veterans Administration Hospital.

Medical Library: Volumes, 199,157

Personnel:

Dean	Robert J. Glaser, M.D.
Medical Library Director	Miss Clara S. Manson

Statewide Statistics:

Total Resident Population	18,880,100
Non-Federal Physician Population	33,165
Counties	58
Hospitals	496
Hospital Beds	62,115

Community Action Programs:

A summary of twenty years of Continuing Education activities was prepared by Stanford and released on 20 September 1968. The activities, not coordinated through one specific person assigned to Continuing Education, consist mainly of short courses offered at Stanford and occasional lecture series at community hospitals. The off-campus lectures primarily consist of postgraduate institutes and circuit courses sponsored by the California Medical Association.

Stanford University School of Medicine (Cont.)

Common Carrier Services (1968):

Thirty foreign exchange lines. Nine to San Francisco. Six to Oakland. Seven to San Jose. Eight foreign exchanges planned for hospitals. Closed circuit TV.

The University of Colorado School of Medicine
Denver, Colorado 80220

Type: State supported

Enrollment: 340 (67-68)

Number of Medical Schools in Colorado: 1

Clinical Facilities: Colorado General Hospital; Colorado Psychiatric Hospital Children's Day Care Center; Eleanor Roosevelt Institute for Cancer Research; John F. Kennedy Child Development Center; Webb-Waring Institute for Medical Research; Belle Bonfils Memorial Blood Bank; and all in the University of Colorado Medical Center. The adjacent Denver Veterans Administration Hospital is a Dean's Committee Hospital.

Medical Library: Staff, 15 (8 prof); volumes, 72,000.

Personnel:

Dean.	John J. Conger, Ph.D.
Medical Library Director. . . .	Dr. Frank B. Rogers
Office of Learning Resources Director	William Cooper, Ph.D.

Statewide Statistics:

Total Resident Population	2,013,200
Non-Federal Physician Population	3,284
Counties.	63
Hospitals	68
Hospital Beds	8,314

Community Action Programs:

The University submitted a three-phase proposal to Regional Medical Programs in the fall of 1968 for the development of a videotape exchange and CCTV system to improve the quality of health care by enhancing the continued professional learning of the health care team. The first phase will involve the University Medical Center, the Denver Medical Center, the Denver Medical Society, Presbyterian Hospital and St. Joseph's Hospitals of Denver. Phase two will extend the network to seven Denver hospitals and phase three will include conversion to color television. The activity will focus around the Office of Resources in Health Science Education of the University. Indications of interest in participating have been received from other institutions in Denver, Colorado Springs, Pueblo, Cheyenne and Casper.

Related Activities:

The Medical School receives computing services from the main campus in Boulder via data link. The Boulder computing center, under the direction of Dr. Rex Kreuger, has a CDC 6400, IBM 360/40 (for administrative data processing), and CDC 8231 Data Link to the 6400. The Medical School in Denver has an IBM 1401 (for administrative data processing), IBM 1800, and a CDC 8130 Data Link to the 6400 on the Boulder campus.

The Medical School in Denver will be one of the terminals of a microwave link transmitting from the main University of Colorado campus in Boulder. The link was authorized by a Federal Health Sciences Advancement Award which was given to the Department of Educational TV. The third and final phase of the award, the development of a microwave link between Boulder and Denver, is the culmination of the development of a biological sciences curriculum that could be shared between Boulder and Denver. The link will allow instructors in Boulder to present basic science courses to the students in the Medical School. James Archer, the Dean of the Graduate School at Boulder, is the principal coordinator.

Common Carrier Services (1968):

Private line from Denver to the University of Colorado, Boulder. Denver hospital TWX connected data set to the computer at Boulder. Medical School connected to Bethesda. Closed circuit TV planned.

University of Connecticut School of Medicine
Hartford, Connecticut 06105

Type: State supported

Enrollment: Data not recorded

Number of Medical Schools in Connecticut: 2

Clinical Facilities: University of Connecticut Health Center and McCook Hospital.

Medical Library: Data not recorded

Personnel:

Dean.	John W. Patterson, M.D., Phd., D.S.
Medical Library Director. . .	Sam W. Hitt

Statewide Statistics:

Total Resident Population	2,848,000
Non-Federal Physician Population	5,223
Counties.	8
Hospitals	38
Hospital Beds	9,152

Yale University School of Medicine
New Haven, Connecticut 96510

Type: Privately endowed

Enrollment: 348 (67-68)

Number of Medical Schools in Connecticut: 2

Clinical Facilities: Yale-New Haven Hospital; West Haven Veterans Administration Hospital; and Connecticut Mental Health Center.

Medical Library: Volumes, 369,128.

Personnel:

Dean	F. C. Redlich, M.D.
Director of Postgraduate Continuing Med. Education	A. Ebbert, Jr., M.D.
Medical Library Director	Stanley D. Truelson, Jr.

Statewide Statistics:

Total Resident Population	2,848,000
Non-Federal Physician Population	5,223
Counties	8
Hospitals	38
Hospital Beds	9,152

Yale University School of Medicine (Cont.)

Common Carrier Services (1968):

Fourteen tie lines between the medical school and the University.

Yale University School of Medicine (Cont.)

Common Carrier Services (1968):

Fourteen tie lines between the medical school and the University.

Georgetown University School of Medicine
Washington, D. C. 20007

Type: Privately endowed

Enrollment: 455 (67-68)

Number of Medical Schools in Washington, D.C.: 3

Clinical Facilities: Georgetown University Hospital; Arlington Hospital; Children's Hospital; District of Columbia General Hospital; Veterans Administration Hospital; U.S. Naval Hospital, Bethesda, Maryland; Walter Reed Army General Hospital; Sibley Hospital; and Columbia Hospital.

Medical Library: Volumes, 47,079.

Personnel:

Dean	John C. Rose, M.D.
Community Medicine Director	Patrick Doyle, M.D.
Medical Library Director	Miss Margaret O'Byrne

Statewide Statistics:

Total Resident Population	806,500
Non-Federal Physician Population	2,963
Counties	-
Hospitals	12
Hospital Beds	4,468

Community Action Programs:

Georgetown's weekly medical research conferences in the Division of Cardiology will be telecast to physicians in the Washington, D.C. metropolitan area under a recently awarded $285,000 grant from RMP. The services of Commercial television will be used to transmit these conferences.

Georgetown has proposed a continuing teaching program for six community hospitals to the Metropolitan Washington, D.C. RMP. The purpose of the teaching program is to train physicians and allied health personnel on the comprehensive care of patients with pulmonary diseases.

The Gulf Corporation has given a $100,000 contract to Georgetown University to establish a prevention and health education system for the community of Reston, Virginia. Dr. Patrick Doyle, the principal investigator, has employed a health educator whose job it is to solicit concepts and ideas from committees composed of Reston residents. The Columbia, Maryland-Johns Hopkins health planning agreement differs from this concept in that much of the planning for Columbia is being done by Johns Hopkins, whereas Dr. Doyle is encouraging the citizens of Reston to plan the system for themselves under the guidance of Georgetown. The program is in the first of three phases. Eventually, the total plan, when it is completed for all seven villages with a total population of 70,000 people, will include accident prevention, a home owners comprehensive health package, school health education and, hopefully, a combined group medical practice. The plan also calls for the master design of a health facility located on thirty acres of Reston property.

Related Activities:

Georgetown, under the auspices of the Metropolitan District of Columbia Regional Medical Program, is trying to establish a uniform system for measuring and evaluating medical care given to the stroke patients in the District. The ultimate aim of the project is to provide better continuity of care to patients who enter the District health care system through any one of the numerous District hospitals.

Dr. Antonio C. DeLeon, Jr. reported that audiotapes entitled "Heart Sounds and Murmurs that were produced by Georgetown were to be distributed by the Public Health Service to interested cardiologists and physicians.

Under a planning grant from RMP, Georgetown has been trying to establish base line data for a region-wide cerebrovascular disease follow-up and surveillance system. The base line data will be used to establish the data criteria for a formal system.

Dr. Patrick Doyle, a member of the President's Commission on Mental Retardation, is one of the Commission members actively involved in the establishment of a National Mental Retardation Information and Resources Center (NMRIRC). Dr. Doyle tends to favor the management and operation of such a Center by a non-federal agency. Where the Department of HEW ad hoc task force on the feasibility of establishing an NMRIRC recommended that a special group under the Secretary design and operate the Center, Dr. Doyle preferred the alternative of giving the job to a single university, a consortium of universities, a private non-profit corporation, or a profit corporation. The ad hoc task force proposal and three or four planning alternatives will be presented to the Secretary of HEW on 10 January 1969.

Georgetown University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

The George Washington University School of Medicine
Washington, D. C. 20005

Type: Privately endowed

Enrollment: 412 (67-68)

Number of Medical Schools in Washington, D. C.: 3

Clinical Facilities: The University Hospital; District of Columbia General Hospital; Children's Hospital; Veterans Administration Hospital; St. Elizabeth's Hospital; Fairfax Hospital; Columbia Hospital for Women; and the Washington Hospital Center.

Medical Library: Volumes, 32,500.

Personnel:

Dean.	John Parks, M.D.
Audio-Visual Coordinator. . .	Frank D. Allan. Ph.D.
Associate Dean for Continuing Medical Education.	Clayton B. Ethridge, M.D.
Medical Library Director. . .	Miss Isabella F. Young

Statewide Statistics:

Total Resident Population	806,500
Non-Federal Physician Population	2,963
Counties.	
Hospitals	12
Hospital Beds	4,468

Community Action Programs:

The George Washington Medical Illustration Department, Columbia Hospital and the Air Force Institute of Pathology are collaborating on a program to develop an audio-visual film cassette library on ovarian neoplasms.

The University, along with the D.C. Hospital and the D. C. Department of Public Health, will be investigating the range of communication resources that are available to provide for the extended care of patients at the Glenn Dale Hospital and the D. C. Village (operated by the D. C. Welfare Department).

Related Activities:

Dr. Irene Tamagne, Program Coordinator and Patient Care Director for George Washington School of Medicine, reported that audio-visual resource materials on heart disease, cancer, and stroke have been produced by the Rehabilitation Research and Training Center.

The University, under the auspices of the Metropolitan Washington, D.C. Regional Medical Program, will be engaged in a program entitled "Comprehensive Hospital and Home Care of the Stroke Patient." The program will involve the development of a regional stroke center, the development of a four-bed stroke unit and the training of stroke rehabilitation teams.

The Biological Sciences Communication Project (BSCP), under Dr. C. Shilling, is an off-campus research project of the University. It is a contract supported group which was established in 1960 and has been associated with the University since 1963. The project is concerned with the flow of biomedical science information. It claims to maintain a specialized space biology information center with information from world-wide sources.

The Department of Program Policy Studies, Science, and Technology of the University received a contract from the Office of Education to study the problems, trends, and requirements for the use of non-print materials by elementary, secondary, and schools of higher education. This effort is being conducted under Dr. Joseph Margolin.

The George Washington University School of Medicine(Cont.)

Common Carrier Services (1968):

- Closed Circuit TV

Howard University College of Medicine
Washington, D.C. 2001

Type: Privately endowed

Enrollment: 391 (67-68)

Number of Medical Schools in Washington, D.C.: 3

Clinical Facilities: Freedmen's Hospital; District of Columbia General Hospital; St. Elizabeth's Hospital; Veterans Administration Hospital; Children's Hospital; Bethesda Naval Hospital; and Walter Reed Hospital

Medical Library: Volumes, 33,388

Personnel:

Dean	K. Albert Harden, M.D.
Audio-Visual Coordinator	Ernest L. Hopkins, M.D.
Medical Library Director	Miss Roberta T. McLemore

Statewide Statistics:

Total Resident Population	806,500
Non-Federal Physician Population	2,963
Counties	-
Hospitals	12
Hospital Beds	4,468

Related Activities:

Doctor Ernest L. Hopkins is the director of the "Audio-Visual Aids Section" of the college. No compendia or indices on materials used by the college are produced.

Howard University College of Medicine (Cont.)

Common Carrier Services (1968):

Two federal tele-communications system lines.

The University of Florida College of Medicine
Gainesville, Florida 32601

Type: State supported

Enrollment: 233 (67-68)

Number of Medical Schools in Florida: 2

Clinical Facilities: Shands Teaching Hospital and Clinics; Veterans Administration Hospital, Gainesville; and Children's Mental Health Unit and Developmental Clinic.

Medical Library: Staff, 17; Volumes, 105,000.

Personnel:

Dean	Emanual Suter, M.D.
Audio-Visual Coordinator	Robert O. Beach
Medical Library Director	Miss Mayo Drake (Acting)

Statewide Statistics:

Total Resident Population	5,936,200
Non-Federal Physician Population	8,454
Counties	67
Hospitals	142
Hospital Beds	20,823

Related Activities:

See Jefferson Medical School, "Proposed Experiment on Drug Efficacy."

The Computing Center at Florida, under the direction of Dr. R. G. Selfridge, has an IBM 360/50, IBM 360/30, IBM 1440, and IBM 1401. A 360/65 will be added in the spring of 1969. Computer terminals currently include twenty-three IBM 2741's, eight IBM 1050's, and two 33 KSR's. In early 1969 the following will be added: sixteen IBM 2741's, five IBM 2740's, one IBM 2780, and two IBM 1070's. Most of the terminals are located on campus. Some are located in Miami, Tampa, and Jacksonville.

Common Carrier Services (1968):

Three outward, full time Florida WATS. Four data sets to an IBM 360 computer. Tie lines to V.A. hospital. ETV in the University and closed circuit TV in the medical school. Outward inter-state WATS, zone 4, with TWX terminals planned.

The University of Miami School of Medicine
Miami, Florida 33152

Type: Privately endowed

Enrollment: 330 (67-68)

Number of Medical Schools in Florida: 2

Clinical Facilities: Jackson Memorial Hospital and Veterans Administration Hospital.

Medical Library: Volumes, 55,000.

Personnel:

Dean.	W. Dean Warren, M.D.
Coordinator of Continuing Medical Education.	Manuel I. Viamonte, Jr., M.D.
Medical Library Director. . .	Mrs. Mildred Crowe Langner

Statewide Statistics:

Total Resident Population . .	5,936,200
Non-Federal Physician Population	8,454
Counties.	67
Hospitals	142
Hospital Beds	20,823

Related Activities:

The University of Miami is located in Coral Gables, Florida. The Medical School of the University is eight miles away in Miami. The computer center at the main campus was equipped with an IBM 7040 and two 1401's. In 1968 a decision was made to replace these machines with a computer of the IBM 360 series. The new 360 will have remote terminals in the Weather Bureau National Hurricane Research Laboratory and the Medical School.

In 1967 and 1968 an intensive study of computer interests in the Medical School was being conducted to determine workload requirements for a remote computer. The study was being conducted by a computer committee under the direction of Dr. Frederick Woessner. There are early indications that the Medical School required computer support in cancer registry, thoracic surgery records, neurological discharge summaries, radiology and business matters at the Jackson Memorial Hospital, the clinical teaching affiliate of the University. In early 1968, Dr. Bodkin, a faculty member who had been on sabbatical to the University of Utah was put in charge of the computer plan for the Medical School.

William H. Atkinson, R.P.B., is the director of the Department of Medical Illustration for the School of Medicine and the Jackson Memorial Hospital. He reports that the University has departmental collections of audio-visual materials, but that these are not available to other users. In June 1969, six additional persons will be added to the current staff of thirteen and a new area will be available for the production of audio-visual aids. He also reports that the University plans to have a closed circuit color television network by mid-summer of 1969.

Related Activities: 2.

The University has been conducting a series of conferences with the administrators of the South Miami Hospital, the Baptist Hospital, and the Doctors' Hospital. Each of these institutions have 250 or larger bed capacity and are looking to the University for medical information services and computer support. Starting with these three institutions, plans are being made for a complete computer network to provide services to all fourteen hospitals in Dade County.

Dr. Michael Gordon, Assistant Professor of Medicine, in the Section of Cardiology of the School of Medicine, developed three animated manikins as a new teaching method in cardiology. Arterial and venous neck pulsations, chest wall movements, and heart sounds and murmurs are dynamically shown or presented in the manikins. Sounds and movements, along with ECG's, x-rays, and hemodynamic data are used to illustrate three different case histories. Dr. Gordon has been collaborating with Dr. Alberto Budkin on the possibility of combining this teaching method with computer capabilities in order to present an entire course in cardiologic education. Negotiations are being conducted for funds to support this effort.

The University of Miami School of Medicine (Cont.)

Common Carrier Services (1968):

One dial TWX. Planned voice grade computer-to-terminal tie line between the University in Coral Gables and the School of Medicine in Miami.

Emory University School of Medicine
Atlanta, Georgia 30322

Type: Privately endowed

Enrollment: 290 (67-68)

Number of Medical Schools in Georgia: 2

Clinical Facilities: Grady Memorial Hospital in Atlanta and Emory University Hospital on the main campus.

Medical Library: Volumes, 66,171

Personnel:

Dean	Arthur P. Richardson, M.D.
Chairman on Continuing Medical Education	J. Willis Hurst, M.D.
Medical Library Director	Open

Statewide Statistics:

Total Resident Population	4,288,700
Non-Federal Physician Population	4,378
Counties	162
Hospitals	120
Hospital Beds	12,696

Community Action Programs:

Emory University and the Medical College of Georgia have received a $19,000 grant from RMP to pay the cost of photocopies provided to students of Emory and Georgia and practicing physicians in the State. Under the terms of the grant, 3,000 pages of free photocopies will be provided to each hospital in Georgia each year. Copies will also be furnished to physicians contacting the library directly. No mention is made in the grant of the limit allowance to individual physicians. An analysis of the photocopy demand will be made. This program is similar to the loan service already being provided by the Universities of Indiana and Nebraska.

Emory University is collaborating with the Grady Memorial Hospital, a 968 bed institution in Atlanta, on the establishment of a new medical television network. The objectives of the new network will be quite similar to the one being phased out by the National Medical Audio-Visual Center. The new network will be dedicated to continuing education for physicians, nurses and paramedical personnel. The base station for the operation will be located at Grady Memorial Hospital, a clinical affiliate of Emory. In addition to presenting live programs, videotapes will be made for distribution to other general hospitals. At the present time, plans are being made to place playback equipment in 41 general hospitals in Georgia. Ampex 5000 or equivalent recorders will be used.

Emory University School of Medicine (Cont.)

Common Carrier Services (1968):

Private line, dial teletype. Thirty-three ASR's at the medical school. Georgia ETV. Closed circuit TV in the University. Access to an IBM 70-50.

Medical College of Georgia
Augusta, Georgia 30901

Type: State supported

Enrollment: 372 (67-68)

Number of Medical Schools in Georgia: 2

Clinical Facilities: Eugene Talmadge Memorial Hospital; University Hospital; Georgia State Training School; Veterans Administration Hospitals, Lenwood and Forest Hills Divisions; Battey State Hospital: and U.S. Army Hospital Specialized Treatment Center, Fort Gordon, Georgia.

Medical Library: Volumes, 50,500; Income, (65-66) $85,445.

Personnel:

Dean	Walter G. Rice, M.D.
Audio-Visual Coordinator	Raymond P. Ahlquist, Ph.D.
Medical Director of Continuing Education	Glen E. Garrison, M.D.
Medical Library Director	Miss Sadie H. Rainsford

Statewide Statistics:

Total Resident Population	4,288,700
Non-Federal Physician Population	4,378
Counties	162
Hospitals	120
Hospital Beds	12,696

Community Action Program:

The Medical College of Georgia is collaborating with the Georgia Baptist Hospital, the Emory University Hospital and the Medical Center of Chatham County in a feasibility program to transmit EKG's via commercial telephone lines. Three of the institutions are located in Atlanta, the fourth is located in Savannah. All four will be interconnected by rented telephone lines. 603 data phones will be installed at the various terminals. The feasibility study will be completed in mid-1969.

See inter-library copying service described under Emory University Medical College.

Medical College of Georgia (Cont.)

Related Activities:

On 1 July 1968 the Medical College established a new organizational unit called the "Division of Health Communications" to produce all educational and audio-visual resources in support of the five schools at the Medical College. The director of the division is James Sutherland, Ph.D., professor of pharmacology. Funding has been provided by the College for a television system.

The Medical College of Georgia and National Cash Register have developed a program on the NCR 315 computer for communicable diseases. The system has been tested in tuberculosis control.

Medical College of Georgia (Cont.)

Common Carrier Services (1968):

One intra-state, outward WATS. Two foreign exchanges from Augusta to Atlanta. Open at Atlanta. Closed circuit TV.

University of Hawaii School of Medicine
Honolulu, Hawaii 96816

Type: State supported

Enrollment: 27 (67-68)

Number of Medical Schools in Hawaii: 1

Clinical Facilities: Data not recorded

Medical Library: Volumes, 407,303; Income (65-66) $1,257,974.

Personnel:

Dean. . . . . Windsor C. Cutting, M.D.
Medical Library Director. . . Dr. Robert D. Stevens

Statewide Statistics:

Total Resident Population	733,700
Non-Federal Physician Population	949
Counties	5
Hospitals	23
Hospital Beds	2,433

The Chicago Medical School
Chicago, Illinois 60612

Type: Privately endowed

Enrollment: 290 (67-68)

Number of Medical Schools in Illinois: 5

Clinical Facilities: Cook County Hospital; Mount Sinai Hospital; Michael Reese Hospital; West Side Veterans Administration Hospital; the Chicago Maternity Center; Illinois State Psychiatric Institute; Schwab Rehabilitation Hospital; Chicago State Hospital; and Elgin State Hospital.

Medical Library: Volumes, 60,000; Income, $72,000 (65-66)

Personnel:

Dean	LeRoy P. Levitt, M.D.
Director Department of Medical Communications and Audio-Visual Coordinator	Jay A. Smith, Ph.D.
Acting Chief Librarian	Stanley Brownstein, B.A., M.S.

Statewide Statistics:

Total Resident Population	10,694,800
Non-Federal Physician Population	14,458
Counties	102
hospitals	254
Hospital Beds	44,908

Community Action Programs:

Dr. LeRoy P. Levitt, Dean of The Chicago Medical School reported that Chicago is not involved in programs such as traveling lecturers or audio-visual programs other than those for their own student body and faculty. The traditional training programs for practitioners as listed in the annual continuing education issue of the Journal of the American Medical Association are in the areas of Cardiology, Psychiatry, and Pathology. Dr. Levitt also reported that Chicago is not contemplating providing library services for others besides students and faculty. He feels that this role will be fulfilled by the John Crerar Regional Medical Library.

The Chicago Medical School is currently seeking someone to function in the capacity of Director of Continuing Medical Education. Until the vacuum is filled, Dr. Levitt is fulfilling that role in addition to being Dean of the Medical School. Dr. Levitt is involved in the Illinois RMP as a member of both the Advisory Council and the Coordinating Committee of the state program. Dr. Martin Bruetman, Associate Professor of Neurology, is Chicago's liaison officer to the RMP.

The Chicago Medical School (Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of Chicago School of Medicine
Chicago, Illinois 60637

Type: Privately endowed

Enrollment: 286 (67-68)

Number of Medical Schools in Illinois: 5

Clinical Facilities: Albert Merritt Billings Hospital; Chicago Lying-In Hospital; Bobs Roberts Memorial Hospital; Nathan Goldblatt Memorial Hospital for Neoplastic Diseases; Argonne Cancer Research Hospital; Charles Gilman Smith Hospital; The Chronic Disease Hospital; Silvain and Arma Wyler Children's Hospital (operated by the Home for Destitute Crippled Children); the Gertrude Dunn Hicks Memorial Hospital; the Nancy Adele McElwee Memorial Hospital; and LaRabida Jackson Park Sanitarium.

Medical Library: Data not recorded

Personnel:

Dean	Leon O. Jacobson, M.D.
Audio-Visual Coordinator	H. Perry Jenkins
Director of Continuing Medical Education	C.W. Vermeulen, M.D.
Medical Library Director	Miss Eleanor Johnson

Statewide Statistics:

Total Resident Population	10,694,800
Non-Federal Physician Population	14,458
Counties	102
Hospitals	254
Hospital Beds	44,908

The University of Chicago School of Medicine (Cont.)

Related Activities:

The University of Chicago Hospital is using a LINC-8 computer to monitor the condition of expectant mothers. Electrodes attached to the patient collect data for the computer which processes and transmits the data to a display for the obstetrician.

The University of Chicago School of Medicine (Cont..

Common Carrier Services (1968):

Nothing of significance

The University of Illinois College of Medicine
Chicago, Illinois 60612

Type: State supported

Enrollment: 779 (67-68)

Number of Medical Schools in Illinois: 5

Clinical Facilities: The University of Illinois Research and Educational Hospitals; Illinois Eye and Ear Infirmary; Presbyterian-St. Luke's Hospital; Cook County Hospital; Hines Veterans Administration Hospital; and the West Side Veterans Administration Hospital.

Medical Library: Volumes, 165,000.

Personnel:

Dean	Open
Audio-Visual Coordinator	A. Hooker Goodwin
Coordinator of Continuing Medical Education	Nat E. Smith, M.D.
Medical Library Directory	Miss Wilma Troxel

Statewide Statistics:

Total Resident Population	10,694,800
Non-Federal Physician Population	14,458
Counties	102
Hospitals	254
Hospital Beds	44,908

The University of Illinois College of Medicine (Cont.)

Related Activities:

Professor Heinz Von Foerster of the Department of Electrical Engineering has been developing a data bank on population which he intends to use for an international demonstration of remote access to a pair of IBM 7090's. Dr. Von Foerster's plan calls for a heuristic program in PLATO language that will enable students to receive machine responses to a set of unstructured questions.

The responsibility for audio-visual materials at the University of Illinois is vested in Richard Bowman, coordinator of the Instructional Television Department. No audio-visual compendia or indices are produced at the University.

The University of Illinois College of Medicine (Cont.)

Common Carrier Services (1968):

Eight intra-state outward WATS, zone 3. Tie lines to the main campus. ETV. Telpak arrangement with the state. Dial TWX shared with the main campus.

Northwestern University Medical School
Chicago, Illinois 60611

Type: Privately endowed

Enrollment: 544 (67-68)

Number of Medical Schools in Illinois: 5

Clinical Facilities: Chicago Wesley Memorial Hospital; Children's Memorial Hospital; Evanston Hospital Association; Passavant Memorial Hospital; the Rehabilitation Institute of Chicago; and the Veterans Administration Hospital, Downey.

Medical Library: Volumes, 159,385.

Personnel:

Dean.	Richard H. Young, M.D.
Audio-Visual Coordinator. . . .	William B. Wartman, M.D.
Chairman of Committee of Cont. Medical Education. . . .	A.S. Petersen, M.D.
Medical Library Director. . . .	William K. Beatty

Statewide Statistics:

Total Resident Population . . .	10,694,800
Non-Federal Physician Population	14,458
Counties.	102
Hospitals	254
Hospital Beds	44,908

Related Activities:

Doctors Albert Rubenstein and Gustave Rath have been the recipients of an NLM Extramural Programs grant to conduct experiments with the information environments of medical researchers. The program started in 1966 and is scheduled to run through 1969. The purpose of the grant is to develop a pilot experiment in which various local hospitals would be connected to the University library by phone and facsimile.

Doctors Rubenstein and Rath are the authors of many behavioral papers on the information search behavior of researchers and physicians. In his papers, Dr. Rubenstein describes the taxonomy of search as consisting of three basic behavioral patterns:

1. The situation where the doctor actively participates in the search for information (e.g. (MEDLARS);

2. Where the doctor passively participates in the search for information; and

3. Where the exchange of information is equal between doctor and source.

Audio-visual materials are not now produced at Northwestern University. Dr. William Wartman, of the Department of Pathology, reported that the University had decided to discontinue activities in this area and planned to use those materials available from the American Medical Association.

Northwestern University Medical School (Cont.)

Related Activities:

Northwestern University, in collaboration with the Hospital Research and Educational Trust of the American Hospital Association, received a grant in June 1968 to establish one of the seven "Health Services Research Centers" under the cognizance of the National Center for Health Services Research and Development. Dr. John Cooper, Dean of Sciences of the University, will be the initial principal investigator. A search is being conducted for a director. The central theme of the Center will be the study of health services effectiveness. Data from the National Health Survey and the American Hospital Association's data bank on hospitals will be used. Estimated level of funding for two years is $200,000.

Northwestern University Medical School (Cont.)

Common Carrier Services (1968):

Nothing of significance

Loyola University Stritch School of Medicine
Chicago, Illinois 60612

Type: Privately endowed

Enrollment: 362 (67-68)

Number of Medical Schools in Illinois: 5

Clinical Facilities: Cook County Hospital; Veterans Administration Hospital, Hines; Illinois State Psychiatric Institute; and State of Illinois John J. Madden Zone Center.

Medical Library: Volumes, 24,139.

Personnel:

Dean.	John F. Sheehan, M.D.
Medical Library Director. . .	Miss Helen Huelsman

Statewide Statistics:

Total Resident Population	10,694,800
Non-Federal Physician Population	14,458
Counties.	102
Hospitals	254
Hospital Beds	44,908

Related Activities:

The Stritch School is in the process of moving into a new Medical Center which will have a greater capacity for the production of audio-visual materials. The director of the photographic department reports that the University plans to produce an audio-visual catalog during 1969.

Loyola University Stritch School of Medicine (Cont.)

Common Carrier Services:

Nothing of significance.

Indiana University School of Medicine
Indianapolis, Indiana 46207

Type: State supported

Enrollment: 848 (67-68)

Number of Medical Schools in Indiana: 1

Clinical Facilities: Marion County General Hospital; two Veterans Administration Hospitals; the LaRue Carter Memorial Hospital; Robert W. Long Hospital; William H. Coleman Hospital; and James Whitcomb Riley Hospital for Children.

Medical Library: Volumes, 68,648;

Personnel:

Dean	Glenn W. Irwin, Jr., M.D.
Audio-Visual Coordinator	James Glore
Associate Dean - Continuing Medical Education	George T. Lukemeyer, M.D.
Medical Library Director	Miss Mary Jane Laatz
Medical Educational Resources Program Director	Seymour Friedberg

Statewide Statistics:

Total Resident Population	4,951,800
Non-Federal Physician Population	4,906
Counties	92
Hospitals	110
Hospital Beds	17,273

Community Action Programs:

The public libraries in the State of Indiana are offered 24-hour TWX service by the Medical Library of the University. The TWX service is advertised to the medical and health community via 140 community newspapers, the Indiana State Medical Association Journal and the Marion County Medical Society Bulletin. Various public relations schemes are used to promote this service. During a six-month period in 1967, 204 requests for specific articles were made by 11 hospitals outside of Marion County. During that same period, 136 physicians requested 342 articles via their local public libraries. 73 bibliographic searches were conducted for physicians. A complete record of reference questions asked by physicians is maintained. A review of the questions indicates that a very large number of these questions are clinical inquiries.

A statewide medical communication system was authorized by the Indiana General Assembly in 1967. A pilot, videotape network project, starting in mid-1967, extended from the Indiana University Medical Center to 15 hospitals in 10 cities. Ampex VR 7500's are placed in each of the 15 hospitals. Second year plans called for increasing the number of participating hospitals to 30. NCME tapes were played during the first year. Leased CMTN tapes were distributed after April 1968. The third source of tapes will include Indiana productions. Current plans include live and pre-recorded presentations via a 2500 MHZ distribution system.

Related Activities:

The School of Medicine Library publishes a complete list of serial holdings annually. The computer-produced list of approximately 3,900 titles is alphabetically arranged in the publication entitled, "In U-M Serial Holdings". The computer file of holdings is structured under fifty-five subject headings. Title lists by single subject headings or in combinations of any two, can be produced. In U-M is Indiana's TWX call symbol.

Dr. Dale J. Hall is the Director of Indiana's Computing Center. The main Research Computing Center has a CDC 3400/3600 Multiprocessing System, the Bloomington Campus an IBM 1050 and Honeywell 200 (with plans for an IBM 1130, SIGMA 2, SIGMA 5 and 33 KSR's), and various regional campuses have three IBM 1130's and two IBM 2780's or CDC 200's. Networks extend to the School of Business, Department of Chemistry and the Humanities Department.

Common Carrier Services (1968):

One outward intra-state WATS. Ninety Full Period foreign exchanges, 33 to the main campus at Bloomington. One wide band, private line. Foreign exchange to 16 locations throughout the state. ETV. Transmit and receive seven schools within the state. Twenty-six Dial TWX's to libraries and schools throughout the state. Medical education voice network to six hospitals and 10 planned. Telpak "C" and "D".

The University of Iowa College of Medicine
Iowa City, Iowa 52240

Type: State supported

Enrollment: 483 (67-68)

Number of Medical Schools in Iowa: 1

Clinical Facilities: Children's Hospital; Psychopathic Hospital; Hospital School; the General Hospital; and Oakdale Hospital.

Medical Library: Volumes, 72,596;

Personnel:

Dean.	Robert C. Hardin, M.D.
Audio-Visual Coordinator. . .	Scott N. Reger
Medical Library Director. . .	Robert W. Cryder

Statewide Statistics:

Total Resident Population	2,820,500
Non-Federal Physician Population	2,889
Counties.	99
Hospitals	116
Hospital Beds	12,770

University of Iowa College of Medicine (Cont.)

Related Activities:

Dr. W. A. Krehl is the Director of the Iowa Regional Medical Program. In mid-1968, the IRMP proposed to use the University Department of Economics to develop a comprehensive demonstration model of an Iowa health information system. It was also proposed that the model include manpower statistics, health facilities and various statistical indices of health. It will also include a determination of the economic feasibility, psychological acceptability, benefits and problems of such a proposed system. The proposal was tentatively approved by the DRMP Council subject to the development of additional data on the relevancy and usefulness of such a system to the purposes of the RMP.

The IRMP received approval to conduct a program on the diagnosis and follow-up care of 3700 children in Iowa with cardiology problems. The University planned to train nurses as pediatric clinical associates to alleviate the shortage of cardiologists in Iowa. The University also planned to look into the feasibility of applying electronic hybrid computer techniques for two cardiology screening units.

Dr. Gerard Weeg, the Director of the Computing Center at the University in Iowa City, reported that the University and 10 colleges are participating in a two-year experimental network under a grant from the National Science Foundation. The ten colleges are Grinnell, Clarke, Loras, Area Ten Community, St. Ambrose, Marycrest, Augustana, Central and Iowa Wesleyan. Eight schools are using IBM 2780's and two are using IBM 1130's, which are connected by 2,000 band leased phone lines to the 2703 and then to the multiplex channel of the Computing Center's IBM 360/65. In addition to the IBM 360/65, the Center also has eight IBM 2260's, nine IBM 2741's, a PDP 8, LINC 8, SDS 92, IBM 1800, two CGP 30's, and two INTERDATA machines.

The University of Iowa College of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of Kansas School of Medicine
Kansas City, Kansas 66103

Type: State supported

Enrollment: 461 (67-68)

Number of Medical Schools in Kansas: 1

Clinical Facilities: The University of Kansas Medical Center; Kansas City General Hospital; Menorah Medical Center; the Children's Mercy Hospital; St. Luke's Hospital; and three Veterans Administration Hospitals.

Medical Library: Staff, 22 (6 prof); Volumes, 90,279;

Personnel:

Dean.	George A. Wolf, Jr., M.D.
Chairman of Continuing Medical Education.	Jesse Rising, M.D.
Medical Library Director. . .	Irvin W. Kron

Statewide Statistics:

Total Resident Population.	2,270,700
Non-Federal Physician Population.	2,455
Counties	105
Hospitals.	134
Hospital Beds.	9,763

Community Action Programs:

The University is establishing a model health community in Great Bend, Barton County. Great Bend has one 184-bed, AHA registered hospital. The entire county has a total of 28 non-federally employed physicians, of which 26 are involved in patient care. Part of this plan calls for the full-time residency of University faculty in the central Kansas medical center. The University team will be concerned with the continuing education of medical and health personnel and also studying community needs and problems.

The Kansas Regional Medical Program is involved in the evaluation of the Cancer Detection Center in Providence Hospital in Kansas City. The Center is now operating as an area referral service. Records of patients are being studied.

The RMP is also developing an in-service training program for nurses concerned with coronary care in community hospitals. The training program will include basic physiological knowledge of coronary care and will extend to an exposure to the social agencies that can aid in the rehabilitation of patients.

Related Activities:

In 1967 the University of Kansas Medical Center started the first of an estimated five years of effort on a videotaped case management system for the teaching of trauma care. One of the collateral objectives of the program is to develop a videotape distribution system to permit the use of the material in training paramedical personnel.

The University of Kansas is affiliated with the Kansas Regional Medical Program which entered its operational phase in June, 1967. Approximately 20 community hospitals are also involved in the Kansas plan. The University link to these 20 hospitals is through the RMP. The RMP has obtained support to conduct a study on a statewide health data bank. The purpose of this project is to eliminate eventually the duplication of effort within the state in accumulating health data.

A second core project in Kansas was established to head up two self-instructional audio-visual centers in the state. Self-loading cartridge projectors, audiotapes, etc., will be placed in these centers for the use of health professionals.

There is a project in the University to determine the feasibility of setting up and using various communications mechanisms for medical education, services and research throughout the state.

Common Carrier Services (1968):

One intra-state, outward WATS. Foreign exchange. Private line from main campus to the state office building in Topeka. ETV network planned. Four outward, intra-state WATS planned.

The University of Kentucky College of Medicine
Lexington, Kentucky 40506

Type: State supported

Enrollment: 291 (67-68)

Number of Medical Schools in Kentucky: 2

Clinical Facilities: The University Hospital.

Medical Library: Volumes, 85,156.

Personnel:

Dean	William S. Jordan, Jr., M.D.
Director of Continuing Education	Nicholas J. Pisacano. M.D.
Medical Library Director	Omer Hamlin, Jr.

Statewide Statistics:

Total Resident Population	3,137,900
Non-Federal Physician Population	3,081
Counties	120
Hospitals	110
Hospital Beds	10,818

Related Activities:

The University of Kentucky uses an IBM 1800, Data Acquisition and Control System, for automated blood test analyses. Twelve different types of blood tests are performed. Forty-five thousand tests are performed each month.

A "unit dose drug system" has been used in the University hospital to distribute drugs to hospital wards. As a manual system, errors in drug dosage have been reduced. The feasibility of automating this system is being investigated under a Public Health Service contract.

Common Carrier Services (1968):

Eighteen tie lines at the capitol available to them. Forty or 50 intra-state, outward WATS. Foreign exchange to all state locations. ETV throughout the state. Connected to state Telpak. Data set at the medical school.

The University of Louisville School of Medicine
Louisville, Kentucky 40202

Type: Private with state and municipal support

Enrollment: 366 (67-68)

Number of Medical Schools in Kentucky: 2

Clinical Facilities: General Hospital; Children's Hospital; Veterans Administration Hospital; Jewish Hospital; Norton Psychiatric Clinic; Louisville Child Guidance Clinic; and Kosair Crippled Children's Hospital.

Medical Library: Data not recorded

Personnel:

Dean.	Donn L. Smith, M.D., Ph.D.
Audio-Visual Coordinator. . . .	Frank W. Shook
Coordinator of Continuing Medical Education.	Charles Duncan, M.D.
Medical Library Director. . . .	Miss Joan Titley

Statewide Statistics:

Total Resident Population . . .	3,137,900
Non-Federal Physician Population	3,081
Counties.	120
Hospitals	110
Hospital Beds	10,818

The University of Louisville School of Medicine (Cont.)

Related Activities:

The Medical Library records interlibrary loan transactions on punched cards. Analyses of transactions include such factors as type of material requested, form of material received, transaction time, failure to receive material, and type of library involved. A review of a thirty month sample of transactions revealed that the individual library's intrinsic operation, not the distance from the resource library, was the factor of maximum force in ILL efficiency.

The University of Louisville School of Medicine (Cont.)

Common Carrier Services (1968):

Dial TWX

147

Louisiana State University School of Medicine
New Orleans, Louisiana 70112

Type: State supported

Enrollment: 520 (estimated) (67-68)

Number of Medical Schools in Louisiana: 3

Clinical Facilities: Charity Hospital of Louisiana at New Orleans.

Medical Library: Volumes, 62,000.

Personnel:

Dean.	John C. Finerty, Ph.D.
Audio-Visual Coordinator. . .	John P. Ische, M.L.S.
Coordinator of Continuing Medical Education.	Rafael C. Sanchez, M.D.
Medical Library Director. . .	John P. Ische

Statewide Statistics:

Total Resident Population.	3,564,500
Non-Federal Physician Population.	4,005
Counties	63
Hospitals.	124
Hospital Beds.	13,666

Community Action Programs:

The Louisiana State University School of Medicine, the Louisiana Department of Hospitals, The Oschsner Foundation Hospital, Tulane University, Charity Hospital, the Confederate Memorial Hospital, and the Earl K. Long Memorial Hospital participated in a joint CCTV network called the "Louisiana Hospital TV Network" (LHTN). The network claims to be the first full-time network television broadcasting system in the nation. LHTN has produced 12 videotapes in the past year and has supplemented this material with videotapes from the Network for Continuing Medical Education, other medical schools and pharmaceutical companies. The network, in addition to being a full-time medical transmission system, is a unique consortium in that it includes in the joint venture, a privately supported medical school, a state-supported medical school, one of the "Big Six" medical clinics, a state organization and private hospitals.

Louisiana State University School of Medicine (Cont.)

Common Carrier Services (1968):

Intra-state, outward WATS available to them through the state Centrex. ETV. Connected on Louisiana Telpak. Closed circuit TV within the state. One dial TWX.

Tulane University School of Medicine
New Orleans, Louisiana 70112

Type: Privately endowed

Enrollment: 510 (67-68)

Number of Medical Schools in Louisiana: 3

Clinical Facilities: The Charity Hospital in New Orleans; Touro Infirmary; Eye, Ear, Nose, and Throat Hospital: Veterans Administration Hospital; Southern Baptist Hospital; Ochsner Foundation Hospital; U.S. Public Health Service Hospital to New Orleans; Huey P. Long Charity Hospital, Pineville, Louisiana; Lallie Kemp Charity Hospital, Independence, Louisiana; Keesler Air Force Base Hospital, Biloxi, Mississippi; and Southeast Louisiana Hospital, Mandeville, Louisiana.

Medical Library: Volumes, 97,347.

Personnel:

Dean.	Open
Medical Library Director. . .	William D. Postell

Statewide Statistics:

Total Resident Population	3,564,500
Non-Federal Physician Population	4,005
Counties.	63
Hospitals	124
Hospital Beds	13,666

Community Action Programs:

Two hospitals in Louisiana are connected to the computer center at Tulane by teletype. The hospitals are assisted in menu planning via CAMP (Computer Assisted Menu Planning), a program designed by Dr. Joseph Balintfy. The hospitals specify patient caloric thresholds and required nutrient values plus an indication of the number of meals required. CAMP responds with breakfast, lunch and dinner menus. CAMP also produces a purchase list indicating the cost of each item and the cost of each patient's meal.

Related Activities:

Tulane University, under a PHS contract, is investigating commercially available computer input/output devices. Since most input/output devices have known deficiencies which will limit systems effectiveness, the purpose of this project is to determine the characteristics of input/output devices for hospital information systems.

Tulane contracted with Information and Communications Applications of Bethesda for the study of on-line hospital information systems. The purpose of the study is to determine the value of computerized information systems to hospitals, to evaluate different types of terminals, and to start standardizing forms and procedures so that future hospitals can go on-line to one another's computers.

In the fall of 1967 Tulane began offering a course of study leading to a Master's degree in Biomedical Communication (MMS). This program was initiated by the National Medical Audiovisual Center and partially supported by NLM. It is operated through a consortium of schools and institutions including the Tulane University School of Medicine and Graduate School of Business Administration, Emory University School of Medicine, University of Nebraska Schools of Medicine and Journalism, Georgia Institute of Technology School of Information Science, and the NMAC.

Tulane University School of Medicine (Cont.)

Common Carrier Services (1968):

ETV. They can transmit and receive. Affiliated with the Louisiana State system.

The Johns Hopkins University School of Medicine
Baltimore, Maryland 21205

Type: Privately endowed

Enrollment: 392 (67-68)

Number of Medical Schools in Maryland: 2

Clinical Facilities: Johns Hopkins Hospital; Baltimore City Hospital; and Sinai Hospital.

Medical Library: Volumes, 207,878;

Personnel:

Dean.	Thomas B. Turner, M.D.
Audio-Visual Coordinator. . . .	Russell H. Morgan
Medical Library Director. . . .	Alfred N. Brandon

Statewide Statistics:

Total Resident Population	3,549,000
Non-Federal Physician Population	5,986
Counties.	24
Hospitals	45
Hospital Beds	11,529

The Johns Hopkins University School of Medicine (Cont.)

Community Action Programs:

Johns Hopkins University has been approached by the planners of the new 100,000-person community of Columbia, Maryland to plan and provide for the health services for that community. Johns Hopkins plans to use the community as a laboratory for testing the best forms of organization and delivery of services.

Related Activities:

Computing equipment at Johns Hopkins include an IBM 7094, CDC 3300, IBM 360/91 (2), and a Sigma 7. Richard Shepard is in charge of medical center computing activities.

The Johns Hopkins University is one of six universities assisting a National Academy of Engineering Committee on the Interplay of Engineering with Biology and Medicine. The six institutions are Johns Hopkins, Carnegie-Mellon University, Massachusetts Institute of Technology, Ohio State University Research Foundation, University of Virginia, and the University of Washington. Each of the seven-month efforts, which were due to be completed on 30 September 1968, were to (1) develop prototype concepts for relating engineering to the physical, biological, medical, social, and management sciences: (2) to identify local civic and industrial resources and to study the operations of local health and medical care institutions and find problems that can be solved through multidisciplinary efforts: and (3) to develop prototype operational plans for interplay. The goal is to stimulate research and to obtain the best combination of resources to solve urgent medical and health care problems.

The Johns Hopkins University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of Maryland School of Medicine
Baltimore, Maryland 21201

Type: State supported

Enrollment: 513 (67-68)

Number of Medical Schools in Maryland: 2

Clinical Facilities: University Hospital: the Psychiatric Institute: Baltimore City Hospitals: Mount Wilson State Hospital: Kernan Hospital for Crippled Children: and Mercy Hospital.

Medical Library: Volumes, 100,811.

Personnel:

Dean	William S. Stone, M.D.
Audio-Visual Coordinator	Open
Chairman of Continuing Medical Education	E.T. Lisansky, M.D.
Medical Library Director	Miss Hilda E. Moore

Statewide Statistics:

Total Resident Population	3,549,000
Non-Federal Physician Population	5,986
Counties	24
Hospitals	45
Hospital Beds	11,529

Related Activities:

The University of Maryland School of Medicine recently negotiated an affiliation with the York Hospital in York, Pennsylvania, as a teaching institution of the School. York Hospital has supported a vigorous Department of Medical Education under the directorship of Doctor Robert Evans. Dr. Evans views education in medicine as a 24-hour task involving all phases of service in the hospital as well as continuing education from formal sources.

The Catonsville and Baltimore campuses of the University have UNIVAC 1004's on-line to the UNIVAC 1108 in the main campus Computer Science Center. There are also nine 33 ASR TTY's at various locations throughout the University and outside of the University. Computer Science Center computers include the UNIVAC 1108, UNIVAC DCT 2000 (10 33 KSR TTY's), UNIVAC UNISCOPE 300 (12 33 ASR TTY's), IBM 7094/1401, Honeywell 1200 (for administrative data processing) and an IBM 360/20 (for administrative data processing). Dr. William F. Atchison is the Director of the Center.

Common Carrier Services (1968):

C Telpak between Baltimore City and College Park. ETV broadcast-only network serving Hagerstown, Baltimore, and Salisbury. This will be expanded in 1971 to include Cumberland, Waldorf, Frederick, and College Park.

Boston University School of Medicine
Boston, Massachusetts 02118

Type: Privately endowed

Enrollment: 292 (67-68)

Number of Medical Schools in Massachusetts: 4

Clinical Facilities: University Hospital; Boston City Hospital; Boston State Hospital; Lemuel Shattuck Hospital; Veterans Administration Hospitals of Boston and Providence; U.S. Naval Hospital, Chelsea; U.S. Public Health Service Hospital, Brighton; Faulkner Hospital; Framingham Union Hospital; Huggins Hospital, Wolfeboro, New Hampshire; Knox County General Hospital, Rockland, Maine; Medfield State Hospital; Monadnock Community Hospital, Peterborough, New Hampshire; Pondville Hospital; Pratt Clinic-New England Center Hospital; James Jackson Putnam Children's Center; Douglas A. Thom Clinic; Malden Hospital; and Waltham Hospital.

Medical Library: Volumes, 42,262

Personnel:

Dean.	Franklin G. Ebaugh, Jr., M.D.
Audio-Visual Coordinator. . .	Salvatore Lunetta
Director of Continuing Medical Education.	Henry J. Bakst, M.D.
Medical Library Director. . .	Miss Florence E. Turner

Statewide Statistics:

Total Resident Population	5,416,500
Non-Federal Physician Population	10,702
Counties.	14
Hospitals	133
Hospital Beds	23,291

162

Community Action Programs:

Assistant Dean Henry Bakst, M.D., has been assigned the collateral task of continuing education. At the present time this function at Boston University is limited to the offering of traditional courses in medicine and related subjects.

Boston University School of Medicine (Cont.)

Related Activities:

In Dr. James Ramey's bibliography entitled, "Television in Medical Teaching and Research", Boston University was reported as using television in the Departments of Anatomy, Cardiology, Pharmacology and Physiology. The Boston TV system was installed in 1960 for a reported cost of $4,500.

John E. Alman, the Computing Center Director, reports that there is an IBM 360/40 at the main campus, an IBM 1440 at the Medical Center, and an IBM 360/30 at the Administrative Data Processing Center. Time-sharing network within the University will shortly include 16 terminals.

Boston University School of Medicine (Cont.)

Common Carrier Services (1968):

On-campus system with access to University computer. Time-shared IBM 360/40 with five Centrex ports. IBM 1050's at various campus locations.

Harvard Medical School
Cambridge, Massachusetts 02115

Type: Privately endowed

Enrollment: 559 (67-68)

Number of Medical Schools in Massachusetts: 4

Clinical Facilities: Massachusetts General Hospital; McLean Hospital; Massachusetts Eye and Ear Infirmary; Peter Bent Brigham Hospital; Beth Israel Hospital; The Children's Hospital Medical Center; Boston Hospital for Women; Boston City Hospital; Massachusetts Mental Health Center; Robert Breck Brigham Hospital; Cambridge City Hospital; New England Deaconess Hospital; West Roxbury Veterans Administration Hospital; Long Island Hospital; Lemuel Shattuck Hospital; Metropolitan State Hospital; Middlesex County Sanatorium; Mt. Auburn Hospital; and Pondville State Hospital.

Medical Library: Staff, 72 (prof 20); Volumes, 399,500;

Personnel:

Dean. . . . . Robert H. Ebert, M.D., D.phil.
Assistant Dean-Continuing Education. . . . . Daniel D. Federman, M.D.
Medical Library Director. . . Harold J. Bloomquist

Statewide Statistics:

T n 5,416,500
1 10,702
. . . . 14
Cc 14
Ho: 133
Hos 23,291

Community Action Programs:

In early 1968 Stephen Goldfinger, M.D. (internal medicine), was appointed Director, Community Programs. Prior to this appointment Harvard's relationships with the non-university affiliated physician was limited to a few (approximately 20) traditional courses in selected specialities. The Community Program was initiated with a questionaire to 1,200 faculty and university affiliated preceptors asking whether they would be willing to participate in a community hospital bedside teaching program. Of 600 replies, 550 indicated a willingness to serve as community preceptors. The visiting lecturer program started in three community hospitals (Anna Jacques in Newburyport, Cable Memorial Hospital in Ipswich, and Winchester Hospital in Winchester) in September 1968. Lectures are scheduled one day a week and will run for 40 weeks. Program coordinators are located at Harvard and each of the hospitals. Bibliographies of selected reading are sent out in advance. Lecture evaluations are submitted by the coordinator and the lecturer. The program is supported by funds from the three hospitals. Harvard underwrites the costs of the Director and his staff. Plans are being made to expand the program to other hospitals and to include an evaluation of the effectiveness of the lecturer on the patient care provided by the participants.

A Vision Information Center, under the auspices of the National Institute of Neurological Diseases and Blindness (NINDB), has been established in the Frances A. Countway Library of Medicine at Harvard University. The Lucien B. Howe Library of Opthamology and the Harvard University Computing Center are affiliated with the Countway Library on this venture. The purpose of this special information center is to disseminate information contained in the literature on vision, to periodically scan selected literature and to integrate this activity with the other four specialized information centers of NINDB. Subject areas of interest include neuro-opthamology, blindness disorders and possibly optics and optometry.

Related Activities:

In 1967 Harvard submitted a grant request to the Public Health Service to establish and evaluate a program in a prepaid group practice program offering comprehensive services to the persons in the Boston area. Staff and facilities will be provided by three Harvard teaching hospitals. Insurance will be provided by commercial insurance carriers. The objective of the program is to define the spectrum of services that will be provided, design and evaluate the insurance structure, collect data on medical care costs, train health manpower and learn about the relation of demand and need in health care.

The Harvard Medical School was one of the seven Health Services Research Centers established by the National Center for Health Services Research and Development in June, 1968. Dr. Paul Densen, the director of the recently established "Center for Community Health and Medical Care", will be the director for the Center also. The problem of health services, as defined by Harvard, is the need for criteria to formulate objectives and measure service levels of health care, and by the assessment of current health care areas, to develop new knowledge for evaluation. Harvard's evaluative research will be concerned with the evaluation of ongoing programs and an evaluation of the total community as a base against which the significance of individual programs can be assessed. Members of the research staff will include representatives from the Harvard Medical School, Harvard School of Public Health, Massachusetts General Hospital, Beth Israel Hospital, Boston City Hospital, Cambridge City Hospital, Children's Hospital, Peter Bent Brigham Hospital and several clinics and laboratories. The boards of trustees of various hospitals and various state organizations in health are supporting the establishment of the Center. The estimated budget for three years is $580,000.

Related Activities:

The Harvard Community Health Plan (HCHP) was established in January 1969 as the first university sponsored prepaid medical care program. Thirty thousand Boston area residents, many of them low income families, are expected to be given almost total health coverage under this experimental plan. Operations are expected to start in the fall of 1969. Dr. Robert Ebert is the newly elected President of HCHP. Professor Jerome Pollack, Associate Dean for Medical Care Planning, is the Executive Director.

Harvard Medical School (Cont.)

Common Carrier Services (1968):

Planning telephone lines into SDS Sigma computer. Thirty 33 ASR's for SDS 940 computer hospital research input-output. All thirty terminals located in Boston area. Two-way TV and data wide band Coax with twenty terminals in Harvard and WGBH Cambridge.

Plan to expand Coax network to include twenty additional terminals. Plan to develop new computer center in the fall of 1971 with 1500 terminals. TWX located in Countway. Centrex proposed.

University of Massachusetts School of Medicine
Amherst, Massachusetts

Type and Enrollment: Data not recorded

Number of Medical Schools in Massachusetts: 4

Clinical Facilities: Data not recorded

Medical Library: Volumes, 358,528; Income (64-65) $1,038,040.

Personnel:

Dean.	Lamar Soutter, M.D.
Medical Library Director. . .	Hugh Montgomery

Statewide Statistics:

Total Resident Population	5,416,500
Non-Federal Physician Population	10,702
Counties.	14
Hospitals	133
Hospital Beds	23,291

Tufts University School of Medicine
Boston, Massachusetts 02111

Type: Privately endowed

Enrollment: 421 (67-68)

Number of Medical Schools in Massachusetts: 4

Clinical Facilities: The Tufts-New England Medical Center; The Boston City Hospital; Saint Elizabeth's Hospital; Boston Veterans Administration Hospital; Lemuel Shattuck Hospital; Saint Margaret's Hospital; and Providence Lying-In Hospital.

Medical Library: Staff, 9 (3 prof); Volumes, 34,574.

Personnel:

Dean	William F. Maloney, M.D.
Assistant Dean for Continuing Med. Education	George Robertson, M.D.
Medical Library Director	Edward P. Leavitt
Director, Office of Research in Educational and Organizational Innovation	Ezra V. Saul, Ph.D.

Statewide Statistics:

Total Resident Population	5,416,500
Non-Federal Physician Population	10,702
Counties	14
Hospitals	133
Hospital Beds	23,291

Tufts University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of Michigan Medical School
Ann Arbor, Michigan 48104

Type: State supported

Enrollment: 794 (67-68)

Number of Medical Schools in Michigan: 3

Clinical Facilities: University Hospital; Women's Hospital; Children's Psychiatric Hospital; Veterans Administration Hospital; and Wayne County General Hospital.

Medical Library: Volumes, 144,881.

Personnel:

Dean.	William N. Hubbard, Jr., M.D.
Audio-Visual Coordinator. . . .	Richard A. Judge, M.D.
Continuing Medical Education.	Harry A. Towsley, M.D.
Medical Library Director. . . .	David K. Maxfield

Statewide Statistics:

Total Resident Population.	8,311,400
Non-Federal Physician Population.	10,390
Counties	83
Hospitals.	191
Hospital Beds.	29,415

Community Action Programs:

The School of Pharmacy of the University of Michigan received support from the Michigan RMP to establish a pilot drug information, therapy, analysis and reporting system. The object of the project is to develop a prototype of a drug information system that will be useful to medical centers and community hospitals. Data is being collected from the American Society of Hospital Pharmacies and other sources.

The Center for Research on Utilization of Scientific Knowledge (CRUSK), an active organization of the University for over twenty years, has had a close working relationship with Dr. Wesley Eisele, Associate Dean for Post Graduate Education, and Dr. Kenneth Williams, Medical Director of St. John's Hospital, Detroit, Michigan. Various hypotheses on the utilization of research information have been tested at these two institutions.

Related Activities:

Doctor Richard A. Judge was co-editor with Michael T. Romano, D.D.S. on "Health Science Television: A Review" which includes selected papers from the 7th Annual Meeting of The Council on Medical Television which was held in 1965 at the University of Michigan Medical Center. The purpose of the meeting was to conduct an in-depth review of TV as used in the health sciences.

Doctors Charles Waters and Floyd C. Mann were the recipients of a contract from NLM Extramural Programs entitled "The Use of Knowledge in Medical Staff Development." Under the terms of the contract, the recipients intend to:

1. Study the medical systems of two hospitals (Lima Memorial Hospital, Lima Ohio and the Pontiac General Hospital, Pontiac, Michigan);

2. Explore and assess information flow, influence processes, and the social organization of the hospitals;

3. Study the interactions between health personnel and hospital information systems; and

4. Develop and test techniques to assess the flow of information to and from physicians.

The University of Michigan received a grant from the Public Health Service to demonstrate and evaluate a burn facility that can serve as a prototype for hospitals and institutions throughout the nation. The demonstration facility will investigate new techniques, procedures, patterns of organization and operations of these facilities.

The University of Michigan's Hospital Administration Program consists of the Program of Hospital Administration, the teaching effort, and the Bureau of Hospital Administration, the research and study arm of the program. The latter was

Related Activities: 2.

originated by Dr. W. McNeary, the author of "Hospital and Medical Economics." In the University's Cooperative Information Center, "Abstracts of Hospital Management Schedules" are published quarterly. This journal contains all articles related to hospital management appearing in 92 English language journals.

The School of Medicine has been conducting a post graduate education program in nursing since mid-1967. Key nursing personnel from hospitals and institutions in Michigan participate in two-week workshops conducted at the University. Various audio-visual materials are used in presenting course material. The object of the program is to develop a current awareness of nurses to the problems of heart disease, cancer and stroke and to identify nursing needs and problems in these areas.

A two-week workshop program is being proposed by the School of Dentistry for the purpose of educating practicing dentists in the problems of treating patients with heart disease, cancer and stroke.

The University of Michigan Medical School (Cont.)

Common Carrier Services (1968):

Twenty foreign exchange services from Ann Arbor to Detroit. Three foreign exchange from Ann Arbor to Lansing. These are handled over a shared Telpak "C". ETV between the University Hospital, St. Josephs, and the V.A. Hospital, Ann Arbor.

Michigan State University College of Human Medicine
East Lansing, Michigan 48823

Type: State supported

Enrollment: 52 (67-68)

Number of Medical Schools in Michigan: 3

Clinical Facilities: Giltner Hall

Medical Library: Volumes, 1,146,100

Personnel:

Dean	Andrew D. Hunt, Jr., M.D.
Medical Library Director	Richard E. Chapin

Statewide Statistics:

Total Resident Population	8,311,400
Non-Federal Physician Population	10,390
Counties	83
Hospitals	191
Hospital Beds	29,415

Related Activities:

Hilliard Jason, M.D., Ed.D., Director of the Office of Medical Education Research and Development, developed a CATV interview self-assessment technique for first-year medical students. Associate on the program was Dr. James B. Thomas; collaborator, Dr. Norman Kagan, who has been developing television replay and critique techniques for teaching and study counseling over several years.

Doctors Nicholas Fiel and Peter Ways have developed multi-media self-instructional units for the teaching of specific techniques of laboratory experiments. The multi-media units include audiotape cartridges, color slides, closed-loop motion picture films and various paper and pencil programs.

Wayne State University School of Medicine
Detroit, Michigan 48207

Type: State supported

Enrollment: 536 (67-68)

Number of Medical Schools in Michigan: 3

Clinical Facilities: Detroit General Hospital; Children's Hospital; The Grace Hospital; Harper Hospital; Hutzel Hospital; Sinai Hospital of Detroit; Veterans Administration Hospital of Dearborn; Wayne County General Hospital; Lafayette Clinic; Kresge Eye Institute; Rehabilitation Institute; Child Research Center; and Detroit Institute of Cancer Research.

Medical Library: Volumes, 68,946

Personnel:

Dean.	Ernest D. Gardner, M.D.
Audio-Visual Coordinator and Director of Continuing Medical Education.	Irwin Schatz, M.D.
Medical Library Director. . . .	Vern M. Pings

Statewide Statistics:

Total Resident Population	8,311,400
Non-Federal Physician Population	10,390
Counties.	83
Hospitals	191
Hospital Beds	29,415

Related Activities:

A report series is available from the Wayne State University School of Medicine and Biomedical Information Service Center on medical library activities in the Midwest and the Metropolitan Detroit area. Forty-one reports were issued in a three and a half-year period. Two titles of potential widespread interest are. "Analysis of the Coverage of Nursing Literature in MEDLARS" and "Classified Checklist of Medical Reference Books and Monographs."

Wayne State University School of Medicine (Cont.)

Common Carrier Services (1968):

Telpak "C" shared with other Michigan Universities. Used between Lansing and Ann Arbor. Various dataphone capabilities.

The University of Minnesota Medical School
Minneapolis, Minnesota 55455

Type: State supported

Enrollment: 632 (67-68)

Number of Medical Schools in Minnesota: 2

Clinical Facilities: The University of Minnesota Medical Center; Hennepin County General Hospital; St. Paul-Ramsey Hospital; and the Minneapolis Veterans Administration Hospital.

Medical Library: Volumes, 170,692.

Personnel:

Dean	Robert B. Howard, M.D., Ph.D.
Audio-Visual Coordinator	Wilbur F. Jensen
Director of Continuing Medical Education	W. A. Sullivan, M.D.
Medical Library Director	Glenn Brudvig

Statewide Statistics:

Total Resident Population	3,610,800
Non-Federal Physician Population	5,280
Counties	87
Hospitals	171
Hospital Beds	18,401

Related Activities:

Computing equipment is located in the Minneapolis East Bank Campus, Minneapolis West Bank Campus, Lauderdale Computer Center, St. Paul Campus, and Duluth Campus. Equipment includes a CDC 8090, CDC 1604, IBM 360/50, CDC 3300, and CDC 1700 with two EAI 680 consoles at the East Bank Campus; a CDC 3200 at the West Bank Campus; a CDC 6600 at Lauderdale; an IBM 360/30 at St. Paul; and an IBM 360/44 at Duluth. Dr. Marvin Stein is the Computing Center Director. As reported to EDUCOM, the networking activities of Minneapolis consist of, "The CDC 6600 located at Lauderdale, Minnesota is the central computer of a network serving University campuses in the Minneapolis-St. Paul area. At present, the CDC 8090, the CDC 3200 and the CDC 3300 are tied to the CDC 6600 via three individual Telpak-A lines. Each of the three remote computers provides at its local site card input and line printer output equivalent to that available at the CDC 6600 site. In addition, both the CDC 3200 and the CDC 3300 simultaneously provide for local computational activities, primarily of an interactive nature. The interactive features are implemented by means of 14 CDC 211 CRT consoles, four on the CDC 3200 and ten on the CDC 3300. Up to three more such remote systems are contemplated. Extension of the network and the area it serves through use of a voice grade communication system and appropriately matched terminals is also contemplated."

The University of Minnesota Medical School (Cont.)

Common Carrier Services (1968):

ETV between Minneapolis and Rochester, consisting of two channels. Shared by the entire University. Two more channels are expected within a year.

The University of Mississippi School of Medicine
Jackson, Mississippi 39216

Type: State supported

Enrollment: 302 (67-68)

Number of Medical Schools in Mississippi: 1

Clinical Facilities: University Hospital; the Veterans Administration Hospital of Jackson; the Mississippi State Hospital at Whitfield; and the Mississippi State Sanatorium at Sanatorium.

Medical Library: Volumes, 50,000.

Personnel:

Dean.	Robert E. Carter, M.D.
Audio-Visual Coordinator. . . .	William C. Holland, M.D.
Chairman of Committee on Continuing Medical Education .	William O. Barnett, M.D.
Medical Library Director. . . .	Miss Irene Graham

Statewide Statistics:

Total Resident Population	2,281,600
Non-Federal Physician Population	1,735
Counties.	82
Hospitals	95
Hospital Beds	7,465

Related Activities:

The University Medical Center is providing data to the Mississippi Research and Development Center in Jackson, Mississippi for the purpose of creating a statewide health data bank. The data bank will also draw its information from the State Board of Health, State hospitals, and from special studies concerned with intensive care. The enabling legislation for the Mississippi R & D Center is a State House Bill.

Dr. Floy J. Moore, of the Department of Psychiatry, has been using videotape to record and store interviews with psychiatric patients. The videotapes become part of the patient's clinical record and are used also for the training of mental health personnel. In July 1968, Dr. Ralph Simon of the Experimental and Special Training Branch of the National Institute of Mental Health awarded the University a contract to explore further the utility of tape for training purposes. Dr. Moore is the full-time principal investigator. Dr. Edward Bird is the TV consultant. Mrs. Brigitte Kenney will be looking into the task of cataloging and indexing the videotapes. The first phase of this contract will be completed on June 30, 1969.

Common Carrier Services (1968):

The University of Mississippi belongs to a statewide library search system not billed to the University. They now have an intra-state WATS service. They anticipate more. Planning a private line, voice-grade service connecting 14 junior colleges to be used for telelectures using pen writers.

The University of Missouri School of Medicine
Columbia, Missouri 65201

Type: State supported

Enrollment: 332 (67-68)

Number of Medical Schools in Missouri: 3

Clinical Facilities: University Hospital and Mid-Missouri Mental Health Center.

Medical Library: Data not recorded

Personnel:

Dean	William D. Mayer, M.D.
Audio-Visual Coordinator	Robert E. Froelich, M.D.
Director of Continuing Medical Education	Gail Banks, M.S.
Medical Library Director	Dean A. Schmidt

Statewide Statistics:

Total Resident Population	4,509,500
Non-Federal Physician Population	5,579
Counties	119
Hospitals	113
Hospital Beds	19,231

Community Action Programs:

The Missouri Regional Medical Program operational activities began on April 1, 1967. Dr. Vernon Wilson is the Director of the RMP and also the Executive Director for Health Affairs at the University. Being the central site for the RMP, many of the University's extramural programs are related to RMP objectives. Some of the operational projects of the RMP are:

1. The University has established a community health service program in the town of Smithville which is located in Clay County on the western edge of the State. Activities are centered around the Smithville Community Hospital which has a total of 48 physicians and a total resident population of 107,500. The Smithville Community Hospital with 75 beds is the only hospital in that community. The Smithville Community Health Service program also includes the local group practice clinic. The purpose of this project is to establish a model community health service program including continuing education for physicians, training programs for allied health personnel and health education for the public.

2. Model multi-phasic screening test centers are being established in the University Medical Center, a State mental hospital and a Smithville complex. The purpose of this project is to establish centers for performing a series of diagnostic laboratory tests for screening large rural population groups.

3. A computer fact bank is being developed for the purpose of delivering the latest information on the diagnosis and care of patients with stroke and allied diseases to local physicians. The basic information storage and retrieval package is being developed at the University Medical Center. There are plans to extend the system to Smithville and other communities. The project started in January, 1967 under the direction of Dr. L. C. Kingsland. The existing files and teaching programs of the University will be loaded into a computer. Inquiry stations will be used initially by medical students. The programs will be pretested on faculty clinicians and eventually extended to hospitals and physicians at large.

The University of Missouri School of Medicine (Cont.)

Community Action Programs:

4. The RMP has established a project for the development of comprehensive care units for patients with heart disease or other circulatory system illnesses. St. John's Hospital, in Springfield, the Greene County Medical Association and three other local hospitals in Springfield are collaborating on this effort. The object of the effort is to establish a comprehensive health care unit in all short-term hospitals in Springfield in collaboration with the only other medical institution in the State.

5. Dr. Don Lindberg, a pathologist with the Medical Center computer group, has been very active in a variety of computer-based programs including the automation of laboratory operations in the medical center and the development of computer recognition of human disease patterns. A state-wide computer program which he has helped develop is for the computer analysis of EKG's. The computer center is using a CDC 8090 for the exclusive use of central electrocardiography computations. Terminals will be located at all local hospitals designed for EKG analysis service.

The Missouri RMP was funded in FY 69 to develop a two-way telephone network to be used for continuing medical education. Level of funding for one year: $80,000. Proposed terminals in the telephone network: 84 institutions.

The University of Missouri School of Medicine (Cont.)

Related Activities:

At a computers-in-medicine conference on Oklahoma, Dr. Donald Lindberg reported that the University had borrowed the Dial-Access audiotapes from the University of Wisconsin and was utilizing them through a (computer) automatic answering apparatus so that the system is totally unattended.

The Missouri Regional Medical Program, in which the University plays a key role, established a communication research unit in 1967 under the direction of Normand duBeau. The unit prepared a series of pamphlets on heart disease, cancer and stroke which have been distributed to the lay public in four Missouri towns. Smithville was one of the sites chosen for public reaction to the material.

The RMP is supporting a proposed telelecture system to be used by the University for the continuing education of physicians and health personnel in the state. The telelecture technique will eventually be expanded to cover the entire state. Slides, tapes, and live presentations will be used. Standard telelecture equipment will be used. Experiments will be conducted with speech compression techniques.

The Medical Center computer facility started with an IBM 1410 in July 1967. The 1410 was replaced by a 360/50. The 360/50 facility consists of:

1. 6 2404 magnetic tape units and controls
2. 1 2302 medium size disc file
3. 1 2311 data cell drive
4. 1 2314 direct access storage unit (consisting of 9 disc paks sections)
5. 1 2321 data cell drive
6. 1 2250 display
7. 2 2260 displays

The inventory of computer equipment includes a CDC 8090 which is used exclusively for EKG analysis. Activities of the University also include the collection and evaluation of data obtained from the public and physicians

Related Activities:

for the early detection of disease; the development and distribution to rural areas of sensors to be used by local institutions for the early detection of disease; the automation of patient history data (in accordance with the technique developed by Dr. Warner Slack at the University of Wisconsin); the study of rural populations and the health services available in rural areas; and the complete automation of hospital records.

The School of Medicine is experimenting with a computer switched dial-access audio facility. Fifty-six audiotape tracks are provided through seven 8-track stereotape players such as those used in automobile-type installations. The 8-tracks in each player have been made independent through an ordinary telephone system cross-bar switching relay configuration. A computer is used to select the machine and the track to permit access by dialing a code plus the identification number of the particular message. Counters are used to record the amount of use of each message. An expanded system will have a storage capacity of 500 messages obtainable through 25 incoming lines. The expanded system will be available to physicians across the state. At present, the University is taping five-minute summaries of classroom lectures.

The University of Missouri School of Medicine (Cont.)

Common Carrier Services (1968):

Two intra-state WATS lines. One private line, voice-grade connecting St. Louis and Columbia. One private line telegraph grade connecting the same two cities.

Saint Louis University School of Medicine
St. Louis, Missouri 63104

Type: Privately endowed

Enrollment: 453 (67-68)

Number of Medical Schools in Missouri: 3

Clinical Facilities: St. Louis University Group of Hospitals including Firmin Desloge Hospital; Wohl Memorial Mental Health Institute; and Glennon Memorial Hospital for Children.

Medical Library: Volumes, 53,221.

Personnel:

Dean	Robert H. Felix, M.D.,Sc.D.,LL.D.
Audio-Visual Coordinator	Bill J. Briggs, M.M.A.
Medical Library Director	Francis B. O'Leary

Statewide Statistics:

Total Resident Population	4.509.500
Non-Federal Physician Population	5,579
Counties	119
Hospitals	113
Hospital Beds	19,231

Community Action Programs:

Metropolitan College is the Continuing Education Division of Saint Louis University. A special catalog listing continuing professional education offerings in medicine, nursing, dentistry, and the health sciences is issued each semester. In the Autumn Semester 1968 catalog, six courses are offered in medicine, six in nursing and three in medical technology. The six courses in medicine are supported by a grant from the National Institute of Mental Health. The courses provide for professional education in psychiatry for non-psychiatric physicians. No tuition is charged for the courses. Only M.D.'s or D.O.'s are admitted to the courses.

Saint Louis University School of Medicine (Cont.)

Related Activities:

Bill J. Briggs, M.M.A.. Assistant Professor of Medical Illustrations in Anatomy, is the newly-appointed Audio-Visual Coordinator for the School of Medicine. He currently provides resources and advice for programs in Anatomy. Psychiatry and Medicine. The University reports that their new junior correlation conferences are now being taped and will shortly become available as a library source.

The University recently activated a Department of Community Medicine. This new department will take over the continuing education functions of the University.

Saint Louis University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

Washington University School of Medicine
St. Louis, Missouri 63110

Type: Privately endowed

Enrollment: 351 (67-68)

Number of Medical Schools in Missouri: 3

Clinical Facilities: The Barnes Hospital; the McMillan Hospital; the St. Louis Maternity Hospital; the St. Louis Children's Hospital; Edward Mallinckrodt Institute of Radiology; David P. Wohl, Jr. Memorial Hospital; Barnard Free Skin and Cancer Hospital; and Renard Hospital.

Medical Library: Volumes, 91,041.

Personnel:

Dean	M. Kenton King, M.D.
Medical Library Director	Estelle Brodman, Ph.D.

Statewide Statistics:

Total Resident Population	4,509,500
Non-Federal Physician Population	5,579
Counties	119
Hospitals	113
Hospital Beds	19,231

Community Action Programs:

Washington University School of Medicine is involved in the Bi-State Regional Medical Program along with Saint Louis University and Southern Illinois University. This program is now becoming functional and a computer is being used on one of the best projects therein. This work involves the communication of radiation dosimetry measurements in treating cancer of the uterine cervix. Dr. William Powers of the Department of Radiology is in charge of this effort.

The University recently established a Division of Health Care Research under the direction of Dr. Gerald Perkoff. He will be involved in a study of a predetermined population group which is designed to evaluate the costs of medical care.

Related Activities:

A compendium of proposed and on-going medical library activities being supported by Regional Medical Programs was compiled by Aleene Schneider, Director of Students at the Washington University Medical Library. Twenty-six special library programs were listed. The compendium was submitted to Dr. Veronica Conley of the Division of Regional Medical Programs in Washington, D.C. for publication. The DRMP felt that the compendium was incomplete.

Dr. M. Kenton King, the Dean of the School of Medicine, reported that the position of Director of Continuing Medical Education, which does not now exist, may be created in the future.

202

Washington University School of Medicine (Cont.)

Common Carrier Services (1968);

Nothing of significance.

The Creighton University School of Medicine
Omaha, Nebraska 68131

Type: Privately endowed

Enrollment: 290 (67-68)

Number of Medical Schools in Nebraska: 2

Clinical Facilities: Children's Memorial Hospital: Creighton Memorial - St. Joseph's Hospital; Douglas County Hospital; St. James Orphanage; St. Vincent's Home for the Aged; and Veterans Administration Hospital, Omaha and Lincoln

Medical Library: Volumes, 31,942

Personnel:

Dean.	Richard L. Egan, M.D.
Audio-Visual Coordinator. . . .	Nicholas Dietz, Ph.D.
Medical Library Director. . . .	Miss Marjory Wannarka

Statewide Statistics:

Total Resident Population . . .	1,473,500
Non-Federal Physician Population	1,641
Counties.	93
Hospitals	119
Hospital Beds	6,870

The Creighton University School of Medicine (Cont.)

Related Activities:

See also the proposal for an audio-visual continuing education service described under South Dakota.

The Creighton University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of Nebraska College of Medicine
Omaha, Nebraska 68105

Type: State supported

Enrollment: 349 (67-68)

Number of Medical Schools in Nebraska: 2

Clinical Facilities: University Hospital; Nebraska Psychiatric Institute; Bishop Clarkson Memorial Hospital; Children's Medical Center; Immanuel Deaconess Hospital; Nebraska Methodist Hospital; and Douglas County and Veterans Administration Hospitals.

Medical Library: Volumes, 31,942

Personnel:

Dean.	Cecil L. Wittson, M.D.
Audio-Visual Coordinator. . .	Reba Benschoter, M.S.
Coordinator of Continuing Medical Education.	Fay Smith, M.D.
Medical Library Director. . .	Mrs. Bernice Hetzner

Statewide Statistics:

Total Resident Population	1,473,500
Non-Federal Physician Population	1,641
Counties.	93
Hospitals	98
Hospital Beds	6,870

Community Action Programs:

The Nebraska Psychiatric Institute is a key institution in the State mental hospital system. It also serves as the Department of Neurology and Psychiatry of the University of Nebraska College of Medicine. The communications division of NPI, under the direction of Dr. Cecil Wittson, operates two CCTV systems from eight to twelve hours each day. One system is internal, the other operates between NPI in Omaha and the Norfolk State Hospital, 112 miles away. Common carrier services (microwave for video and land line for audio) are purchased from the Northwestern Bell Telephone Company. There are five transmitting and receiving stations at the State Hospital and five at NPI. The project, supported by a seven-year research grant from NIMH, is used for education, training, patient services and collaborative research.

The University of Nebraska provides twenty-four hour Xerox service for physicians in the State of Nebraska. Thirteen public libraries in Nebraska are part of a teletype network to the College of Medicine. During a 17-month period ending in July 1968, the Medical Library processed 238 reference requests directly for physicians and for local libraries receiving requests from community practitioners. A review of all reference requests indicates that a large number of these are clinically-oriented questions. Not included in the above are requests for single articles. According to Mrs. Bernice Hetzner, Nebraska has two key medical resource libraries (Omaha and Lincoln) and is severely lacking in service libraries in small communities. As a result, the resource library is faced with the task of being a service library also.

Related Activities:

See also the proposal for an audio-visual continuing education service described under South Dakota.

The University of Nebraska College of Medicine (Cont.)

Common Carrier Services (1968):

Three outgoing, intra-state WATS lines. Future plans include incoming, intra-state WATS lines. They propose accessing a computer for dispensing drug information.

Dartmouth Medical School
Hanover, New Hampshire 03755

Type: Privately endowed, two-year medical school

Enrollment: 96 (67-68)

Number of Medical Schools in New Hampshire: 1

Clinical Facilities: Mary Hitchcock Memorial Hospital and the White River Junction Veterans Administration Hospital.

Medical Library: Volumes, 64,332.

Personnel:

Dean	Carleton B. Chapman, M.D.
Director of Continuing Medical Education	Dean J. Seibert, M.D.
Medical Library Director	Mrs. June I. Hicks

Statewide Statistics:

Total Resident Population	657,100
Non-Federal Physician Population	888
Counties	10
Hospitals	30
Hospital Beds	2,658

Dartmouth Medical School (Cont.)

Community Action Programs:

Dr. Dean J. Seibert, the Director of Continuing Medical Education, mentioned the following on-going and planned extramural programs:

1. On-going Extramural Programs

a. Dartmouth Medical School has had limited participation in programs serving community physicians and other health practitioners, but with the development of more clinical departments it expects to be involved more fully in continuing education programs.

b. Training program in Emergency Medical Services.

c. Closed circuit TV between Dartmouth and Claremont, N.H. hospital currently in operation to provide psychiatric consultation services.

d. Nursing education in coronary care unit.

e. Dartmouth Medical School is participating in a number of continuing education programs for hospitals and medical societies in nearby communities. Prior to establishing its own sponsored program for physicians in the area, Dartmouth is collaborating with the University of Vermont Medical School in a number of extramural commitments.

f. Within the newly developed Department of Community Medicine, a program is now in effect which will provide for a resident to be at the Mary Peck Day Hospital in Lebanon, N.H. and outlying rural communities in New Hampshire and Vermont.

2. Planned Extramural Programs

a. A state center for the training of physical therapy technicians for arthritis.

Community Action Programs:

b. Televised tumor conference planned to link physicians and surgeons of community hospitals to specialists at the Hitchcock Hospital (Hanover. N.H.). A pilot program involving the Claremont Hospital will begin shortly.

c. Education for local physicians, paramedical personnel, and families of patients in the management of chronic renal disease through hemodialysis.

d. Emergency ambulance service.

e. The Department of Community Medicine is in the final stage of development and it is anticipated that it will have a number of residents in rural communities throughout northern New Hampshire.

f. Medical care for children and youth at the Alice Peck Day Hospital in Lebanon, H.H. staffed by residents from the Mary Hitchcock Hospital in Hanover.

The Computing Center GE 635 has terminals at the Harvard School of Public Health and the University of Michigan School of Public Health. Records of computer programs used by Harvard and Michigan are not maintained at Dartmouth. Information on Harvard's and Michigan's use of the Dartmouth computer must be obtained from those schools.

Related Activities:

Dr. George R. Stibitz, of the Physiology Department, is the principal user in the Medical School of the Computing Center GE 635. Dr. Stibitz uses the computer as in introduction for first-year medical students to the use of the computer, preparing abstracts from printed articles and model-making in physiology.

The Medical School has seven consoles connected to the GE 635. Two of the consoles are located in the Physiology Department, one in Pharmacology, one in Biochemistry, two in Bio-life Sciences, and one in the Radiology Department of the Mary Hitchcock Memorial Hospital.

Dartmouth Medical School (Cont.)

Common Carrier Services (1968)

Teletype access through Centrex to a time-shared GE 635 computer. Forty off-campus terminals in primary schools, high schools and colleges with direct access to computer. Access also includes Harvard Law School and certain cities in southwest Connecticut. Five intra-state inward WATS for use by Dartmouth alumni.

New Jersey College of Medicine and Dentistry
Jersey City, New Jersey 07304

Type: State supported

Enrollment: 307 (67-68)

Number of Medical Schools in New Jersey: 2

Clinical Facilities: Newark City Hospital, Newark, New Jersey; and Veterans Administration Hospital, East Orange, New Jersey.

Medical Library: Volumes, 25,000; Income (65-66) $90,000.

Personnel:

Dean.	Rulon W. Rawson, M.D.
Medical Library Director. . . .	Jerome S. Rauch

Statewide Statistics:

Total Resident Population.	6,767,600
Non-Federal Physician Population.	9,183
Counties	21
Hospitals.	93
Hospital Beds.	22,168

Community Action Programs:

The College collaborated with the New Jersey Heart Association, Hackensack Hospital, St. Barnabos Medical Center and the Atlantic City Hospital on a proposal to RMP to develop a state-wide program in external cardio-pulmonary resuscitation (ECPR). The object of the effort is to develop standards and uniform training for ECPR techniques to physicians, nurses and emergency personnel.

The College proposed to establish a telephone audiotape system and medical film library which was not funded by RMP. It was proposed that the medical audiotapes would be available from physicians' answering services during the first year and later from the Newark City Hospital.

New Jersey College of Medicine and Dentistry (Cont.)

Common Carrier Services (1968):

Nothing of significance

Rutgers - The State University Rutgers Medical School
New Brunswick, New Jersey 08903

Type: State supported

Enrollment: 32 (67-68)

Number of Medical Schools in New Jersey: 2

Clinical Facilities: St. Peter's Hospital in New Brunswick and Muhlenberg Hospital in Plainfield.

Medical Library: Data not recorded

Personnel:

Dean	DeWitt Stetten, Jr., M.D., Ph.D.
Medical Library Director	Miss Emma C. Gergely

Statewide Statistics:

Total Resident Population	6,767,600
Non-Federal Physician Population	9,183
Counties	21
Hospitals	93
Hospital Beds	22,168

The University of New Mexico School of Medicine
Albuquerque, New Mexico 87106

Type: State supported

Enrollment: 85 (67-68)

Number of Medical Schools in New Mexico: 1

Clinical Facilities: The Bernalillo County Indian Hospital; Albuquerque Veterans Administration Hospital; and Albuquerque Community Mental Health and Mental Retardation Center.

Medical Library: Volumes, 32,000.

Personnel:

Dean.	Reginald H. Fitz, M.D.
Assistant Dean for Continuing Medical Education. .	George M. Boyden, M.D.
Medical Library Director. . .	Robert T. Divett

Statewide Statistics:

Total Resident Population	1,046,000
Non-Federal Physician Population	898
Counties.	32
Hospitals	39
Hospital Beds	3,022

The University of New Mexico School of Medicine (Cont.)

Common Carrier Services:

Seven tie lines to the state 701 Centrex. Access to New Mexico WATS, zone 6. Data phones to the research computer. One dial TWX. Closed circuit TV on campus via university owned microwave.

Albany Medical College of Union University
Albany, New York 12208

Type: Privately endowed

Enrollment: 275 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: Albany Medical Center Hospital; Albany Veterans Administration Hospital; Ellis Hospital; and Mary Imogene Bassett Hospital, Cooperstown.

Medical Library: Volumes, 43,000; income (annually) $51,000.

Personnel:

Dean.	H.C. Wiggers, Ph.D., Sc.D.
Director of Continuing Medical Education.	Frank M. Woolsey, Jr., M.D.
Medical Library Director. .	Miss Ursula H. Anker

Statewide Statistics:

Total Resident Population. . .	17,981,800
Non-Federal Physician Population.	39,242
Counties	62
Hospitals.	335
Hospital Beds.	79,294

Community Action Programs:

Albany College of Medicine is the leader of the operational Albany Regional Medical Program (ARMP) which covers Northeastern New York and parts of Southern Vermont and Western Massachusetts. Program coordinator, Frank Woolsey, Jr., M.D., Associate Dean, Department of Postgraduate Medicine, Albany Medical College. Focus of the program is the community, particularly the community hospital. Some of ARMP's pilot projects are: two-way radio network; the training of former pharmaceutical manufacturer's representatives as community information coordinators between individuals, communities and the College; the development of community hospital learning centers (financed by NLM); and coronary care training and demonstration programs.

The two-way radio communication system is an expansion of a network that has been in operation for 11 years. Fifty-seven hospitals and twenty-four high schools will be included in the network for continuing medical education, latest scientific information, and informal conferences and forums. The Albany radio network includes hospitals throughout New England, the eastern third of New York State, the northern third of New Jersey, as well as metropolitan New York City. Each hospital will have a radio conference room, a 2x2 slide projector and screen (for transparencies that accompany lectures), and will contribute $700 annually to defray expenses. Sixteen medical colleges are linked by Class D telephone lines to the College studio and can be information originators also. Network equipment includes studio transmitter, two-frequency receivers, tone equipment (for signaling questions), two-way equipment, and one-way equipment. Costs of equipment to expand system from 24 to 57 hospitals and 24 high schools = $100,000.

The community hospital learning centers are partly based on "self-instructional" development work financed by NLM. 1968 plans call for the establishment of learning centers in 8 community hospitals that will supply space, utilities, personnel supervision, and $800 annually to defray production of new instructional units. Hospital equipment will

Community Action Programs:

include Calbest Multiplex Receivers, Packard Bell training consoles consisting of 2x2 rear screen projection and audiotape playback, 10-inch TV receivers, Fairchild Mark IV 8 mm. projectors, Newcomb phonographs, and Ampex videotape recorders. The College will have the same equipment and two additional videotape recorders.

Related Activities:

The College of Medicine is represented by Dr. Woolsey on the National Committee for the Distribution of Audio-Visual Materials, established in August, 1968, by Dr. Harold Schoolman, Veterans Administration, Washington, D.C.

The College, under the auspices of the ARMP, established a public relations effort to cultivate understanding, participation and support for the RMP. The nucleus of the effort will be a group of community information coordinators who will be hired from the ranks of pharmaceutical detail men. The people that the detail men will be asked to contact to promote RMP and in return to obtain reactions on the activities of the College will be hospital administrators, physicians, nurses, educators, technologists and a variety of lay citizens. The program will start in mid-1968 with the hiring of four pharmaceutical representatives.

Albany Medical College of Union University (Cont.)

Common Carrier Services (1968):

Data phone from hospital to computer in Schenectady. The College owns a radio station. Transmits from radio station to other schools, (70 hospitals in seven states). Question/answer period during broadcasting with all parties able to hear all questions and answers. Closed circuit television and some microwave.

Albany Medical College of Union University (Cont.)

Common Carrier Services (1968):

Data phone from hospital to computer in Schenectady. The College owns a radio station. Transmits from radio station to other schools, (70 hospitals in seven states). Question/answer period during broadcasting with all parties able to hear all questions and answers. Closed circuit television and some microwave.

Columbia University College of Physicians and Surgeons
New York, New York 10032

Type: Privately endowed

Enrollment: 486 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: Presbyterian Hospital; Sloane Hospital for Women; Babies Hospital and Vanderbilt Clinic; the Neurological Institute; Institute of Ophthalmalogy; New York Orthopedic Hospital; Squier Urological Clinic; New York State Psychiatric Institute; Francis Delafield Hospital for Cancer Research; Bellevue Hospital; Goldwater Memorial Hospital; Roosevelt and St. Luke's Hospitals; and Mary Imogene Bassett Hospital, Cooperstown.

Medical Library Volumes, 260,402.

Personnel:

Dean	H. Houston Merritt, M.D.
Audio-Visual Coordinator	George A. Perera, M.D.
Medical Library Director	Thomas P. Fleming

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physicial Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

Related Activities:

The first operational specialized information center of the National Institute of Neurological Diseases and Blindness was the Parkinson's Information Center at the College of Physicians and Surgeons of Columbia University. The Center, composed of elements of the medical library and the Parkinson's Disease Research Center, will search, analyze, store, and recall information on Parkinson's Disease and develop a directory of research workers and institutions engaged in Parkinson's Disease. The Center obtained all of the Parkinson-related citations stored in MEDLARS, developed a specialized Parkinson's vocabulary and added terms to the existing citation index. In the first two years of manual operations, 15,000 articles from 4,000 serials were loaded.

Columbia University College of Physicians and Surgeons (Cont.)

Common Carrier Services (1968):

Shared data phone system.

28.26

Cornell University Medical College
New York, New York 10021

Type: Privately endowed

Enrollment: 1,345 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: The New York Hospital; the Hospital for Special Surgery; Memorial Hospital; and the Sloan-Kettering Institute for Cancer Research. The Medical College also administers the Second (Cornell) Medical Division of Bellevue, an affiliation that will be terminated on July 1, 1968.

Medical Library: Volumes, 85,000.

Personnel:

Dean.	John E. Deitrick, M.D.
Medical Library Director. . .	Mrs. Emiko Akiyama

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties.	62
Hospitals	335
Hospital Beds	79,294

Cornell University Medical College (Cont.)

Common Carrier Services (1968):

Six WATS lines, zone 3, planned. Six additional WATS lines, zone 4, within a year.

Albert Einstein College of Medicine of Yeshiva University
Bronx, New York 10461

Type: Privately endowed

Enrollment: 392 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: Bronx Municipal Hospital Center (Abraham Jacobi Hospital and the Nathan B. Van Etten Hospital); Montefiore Hospital and Medical Center, Hospital of the Albert Einstein College of Medicine; Lincoln Hospital; and Bronx State Hospital.

Medical Library: Volumes, 60,000.

Personnel:

Dean	Harry H. Gordon, M.D.
Audio-Visual Coordinator	Stanley Waine
Chairman of Continuing Medical Education	Harold Jacobson, M.D.
Medical Library Director	Mrs. Sonia L. Gruen

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

Related Activities:

There is a standing committee in the College on communications that is concerned with general problems of communication and also the problem of minimizing the information gap between the library and the physician. The scope of their activities include communications between Lincoln Hospital, Bronx State Hospital, Montefiore and Murrisania Hospitals and three store-front community health centers.

Albert Einstein College of Medicine of Yeshiva University (Cont.)

Common Carrier Services (1968):

Nothing of significance

Mount Sinai School of Medicine of the City University of New York
New York, New York 10029

Type: Privately endowed

Enrollment: Data not recorded

Number of Medical Schools in New York: 12

Clinical Facilities: Data not recorded

Medical Library: Data not recorded

Personnel:

Dean	George James, M.D.
Dean of Continuing Medical Education	M. Ralph Kaufman, M.D.
Medical Library Director	Data not recorded

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

New York Medical College
New York, New York 10029

Type: Privately endowed

Enrollment: 507 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: Flower and Fifth Avenue Hospitals; Metropolitan Hospital; Bird S. Coler Hospital and Home; New York State Department of Mental Hygiene; East Harlem Health Center and Department of Health, City of New York.

Medical Library: Volumes, 1,200.

Personnel:

Dean	J. Frederick Eagle, M.D.
Medical Library Director	Tamara E. Grad

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

New York Medical College (Cont.)

Common Carrier Services (1968):

Four tie lines going to hospital IBM 360 computer. Six or seven tie lines to the Flower 5th Avenue Hospital planned. Telpak arrangement.

New York University School of Medicine
New York, New York 10016

Type: Privately endowed

Enrollment: 506 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: Bellevue Hospital Center; University Hospital-New York University Medical Center; Goldwater Memorial Hospital for Chronic Diseases; and New York Veterans Administration Hospital.

Medical Library: Staff, 20; Volumes 70,000.

Personnel:

Dean.	Lewis Thomas, M.D.
Medical Library Director. . . .	Gilbert J. Clausman

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties.	62
Hospitals	335
Hospital Beds	79,294

Related Activities:

More than 58 medical institutions in the United States are participating in a Child and Youth (C and Y) study program. Neurological data are being transferred into tape format under a protocol established by Julius Korein, M.D., of New York University. The purpose of these C and Y neurological records is to collect data on patient case histories and also to develop an effective patient record that will be useful to a variety of mental health personnel.

New York University School of Medicine (Cont.)

Common Carrier Services (1968):

Nothing of significance.

The University of Rochester School of Medicine and Dentistry
Rochester, New York 14620

Type: Privately endowed

Enrollment: 282 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: The Strong Memorial Hospital; Genesee Hospital; Highland Hospital; and Rochester General Hospital.

Medical Library: Volumes, 87,171

Personnel:

Dean	J. Lowell Orbison, M.D.
Audio-Visual Coordinator	Victor M. Emmel, M.D., Ph.D.
Chairman of Continuing Med. Education Committee	James A. Manning, M.D.
Medical Library Director	Willis Bridegam

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

Community Action Programs:

The University was funded for the first phase of a region-wide multi-phasic screening program. Phase I will consist of establishing a multi-phasic screening station in Strong Memorial Hospital. Additional stations will be established as the program progresses. The multi-phasic screening concept is part of the University's comprehensive health care program for patients in western New York State.

Related Activities:

The November 1968 issue of the Bulletin of The Clearinghouse on Self-Instructional Materials for Health Care Facilities reported that multi-media self-instructional programs in operating room procedures have been developed by the University of Rochester's nursing faculty for student nurses. Five programmed units, starting with instructions and procedures for setting up the Mayo Tray, have been completed. Evaluations of the units indicate that there is a significant gain in the performance of student nurses instructed by these procedures.

The Medical Center of the University of Rochester has been using an IBM 1401 for patient billing and general hospital administration. Plans are being made to replace the 1401 with a 360/40 sometime during 1968. The computer center is under the direction of David Goldstein, M.D., who also heads up an atomic energy project in the University. For research programs, faculty members use an IBM 7074 and an IBM 360/50 at the River Campus. After the 360/40 is installed and on the air, the first program to be loaded will be in-patient/out-patient billing for the hospital. Plans were being made to include laboratory orders and reports, medical records, and possibly the retrieval of medical literature in the new computer.

The University is actively participating in RMP through Dr. Ralph C. Parker, Jr., the Director of the Rochester Regional Medical Program. The Rochester RMP was established in October, 1966. An operational grant award of $255,000 was received in March, 1968. The Rochester RMP program includes:

1. The renovation of a portion of the building which houses the Department of Nursing for self-instructional learning. The learning center will consist of a laboratory, classroom facilities, conference rooms and self-instructional units. The learning center is being designed for physicians, nurses and allied health personnel.

Related Activities:

2. Post graduate training for physicians in the ten counties of the Rochester region; and

3. Registry of patients with acute myocardium infarction and the support of a laboratory for the education and training of personnel concerned with the care of patients with certain disorders.

The University has received support from the Pfizer Corporation and the Hospital Research Educational Trust of the AHA to set up a clearinghouse for programmed materials in medical education and also health care fields other than medicine. The clearinghouse has the function of collecting information on instructional materials, publishing information on programmed instruction for hospital administrators, responding to inquiries about specific programs and otherwise supporting the objectives of the programmed instruction. The clearinghouse is coordinated by Dr. Jerome P. Lysaught, an assistant Professor of Education and Research Associate in medical education.

Common Carrier Services (1968):

Private line teletype on campus. Dial TWX.

State University of New York at Buffalo School of Medicine
Buffalo, New York 14214

Type:	State supported
Enrollment:	399 (67-68)
Number of Medical Schools in New York:	12
Clinical Facilities:	Children's Hospital; Buffalo General Hospital; Edward J. Meyer Memorial Hospital; Millard Fillmore Hospital; the Roswell Park Memorial Institute; and Veterans Administration Hospital.
Medical Library:	Data not recorded

Personnel:

Dean	Douglas M. Surgenor, Ph.D.
Audio-Visual Director	Robert E. Pantera, D.D.S.(Acting)
Associate Dean of Continuing Med. Education	Harry J. Alvis, M.D.
Medical Library Director	Miss Miriam Hawkins

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

Community Action Programs:

A two-way telephone communication network will link all hospitals in western New York with the University and the Roswell Park Memorial Institute. Douglas Surgenor, Ph.D., is in charge of this program. The initial network will involve 46 institutions. This system differs from other telephone communication networks in that it will be a private line system leased from the New York and Pennsylvania telephone companies. The communication network will be used to transmit educational programs, administrative conferences, poison control information, EKG's, blood bank information and medical data. The total communication cost will be $30,000.

Common Carrier Services (1968):

Two intra-state WATS services. On campus ETV. They have TWX for a New York state interlibrary loan system. Dataphone capabilities.

State University of New York Downstate Medical Center
Brooklyn, New York 11203

Type: State supported

Enrollment: 780 (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: State University Hospital; the Brooklyn-Cumberland Medical Center; Brooklyn State Hospital; Brooklyn Veterans Administration Hospital; Jewish Chronic Disease Hospital; the Jewish Hospital and Medical Center of Brooklyn; Kings County Hospital Center; the Long Island College Hospital; the Long Island Jewish Hospital; Maimonides Medical Center; and the Methodist Hospital of Brooklyn.

Medical Library: Volumes, 70,000; Income, (64-65) $65,693.

Personnel:

Dean	Joseph K. Hill, Ph.D., D.Sc.
Director of Continuing Medical Education	Charles M. Plotz, M.D., Med.Sc.D.
Medical Library Director	Mrs. Helen Kovacs

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

State University of New York Downstate Medical Center (Cont.)

Common Carrier Services (1968):

Eight tie lines to Kings County Hospital. Closed circuit TV. Medical library has a TWX.

State University of New York Upstate Medical Center
Syracuse, New York 13210

Type: State supported

Enrollment: 400 (projected) (67-68)

Number of Medical Schools in New York: 12

Clinical Facilities: State University Hospital; Syracuse Memorial Hospital; City Hospital; Crouse-Irving Hospital; Syracuse Psychiatric Hospital; Veterans Administration Hospital; St. Joseph's Hospital; St. Mary's Hospital; Community-General Hospital; Gordon D. Hoople Hearing and Speech Center, and the County Health Department Bureau of Maternal and Child Care.

Medical Library: Staff, 18 (5 prof); Volumes, 75,000.

Personnel:

Dean	Julius B. Richmond, M.D.
Director of Continuing Medical Education	Richard H. Lyons, M.D.
Medical Library Director	Irwin H. Pizer

Statewide Statistics:

Total Resident Population	17,981,800
Non-Federal Physician Population	39,242
Counties	62
Hospitals	335
Hospital Beds	79,294

State University of New York Upstate Medical Center (Cont.)

Community Action Programs:

The Upstate Medical Center of the State University of New York has established a program to increase the skills of nurse specialists in small regional hospitals. The nurse specialists will attend seminars and courses at the Medical Center in Syracuse and will be contacted via remote two-way telephone and television hook-ups in their respective hospitals. The University courses and the telephone conferences will be augmented by on-site instructions by a traveling instructor from the Upstate Medical Center. The community hospitals that will be participating in the program have not yet been designated. They will be decided by the enrollees in the program. Audio-visual materials to be used in this program will include motion pictures, slides and video.

Related Activities:

The University's Biomedical Communication Network, under development since 1965, was activated in the fall of 1968. There are nine participating libraries: the Health Sciences Library of the State University at Buffalo, the University of Rochester Medical Center Library, the SUNY Upstate Medical Center Library, the Albany Medical College, the SUNY Downstate Medical Center at Brooklyn, the SUNY Stony Brook Biomedical Library, Harvard University Francis A. Countway Library, Columbia University Medical Center - the Parkinson Disease Information Center, and the National Library of Medicine. The central computer is located at Syracuse. One or more communications terminals are located in each one of the libraries. Information stored in the network consists of book catalog records for the three SUNY medical libraries, portions of the National Library of Medicine's MEDLARS file, and a union list of serials for all libraries within the State University and the member libraries of the Central New York Reference and Resources Council.

State University of New York Upstate Medical Center (Cont.)

Common Carrier Services (1968):

Six Full Period C-4 grade lines. Syracuse to Buffalo. Rochester, Albany, Manhattan, Boston, and Bethesda. Two foreign exchange lines between Syracuse and Rome. Telpak "B" between Syracuse and Albany.

Bowman Gray School of Medicine of Wake Forest University
Winston-Salem, North Carolina 27103

Type: Privately endowed

Enrollment: 221 (67-68)

Number of Medical Schools in North Carolina: 3

Clinical Facilities: The North Carolina Baptist Hospital

Medical Library: Volumes, 43,559; 1965-66 income, $59,095

Personnel:

Dean	Manson Meads, M.D.
Audio-Visual Coordinator	George Lynch
Coordinator of Continuing Medical Education	Louis deS. Shaffner, M.D.
Medical Library Director	Miss Betty Withrow

Statewide Statistics:

Total Resident Population	4,875,600
Non-Federal Physician Population	5,023
Counties	100
Hospitals	137
Hospital Beds	17,002

Bowman Gray School of Medicine of Wake Forest University (Cont.)

Community Action Programs:

See medical libraries interlibrary loan TWX program listed under Duke.

Related Activities:

Eighty-Four medical schools were surveyed by Clyde Hardy, Jr.. an Associate Dean of the School of Medicine, to determine which schools have or are planning to establish group practice plans for faculty members. Twenty-two have a school-wide group practice program; sixteen plan to establish one. Six schools have one or more departments with group practices; four have programs for Medicare and Medicaid patients only.

Bowman Gray School of Medicine of Wake Forest University (Cont.)

Common Carrier Services (1968):

Dial TWX

Duke University School of Medicine
Durham, North Carolina 27706

Type: Privately endowed

Enrollment: 329 (67-68)

Number of Medical Schools in North Carolina: 3

Clinical Facilities: Duke Hospital and Durham Veterans Administration Hospital.

Medical Library: Volumes, 71,644; Income $166,054.

Personnel

Dean	William G. Anlyan, M.D.
Audio-Visual Director	Samuel A. Agnello
Assistant Dean, Continuing Medical Education	William J.A. DeMaria, M.D.
Medical Library Director	G.S.T. Cavanagh

Statewide Statistics:

Total Resident Population	4,875,600
Non-Federal Physician Population	5,023
Counties	100
Hospitals	137
Hospital Beds	17,002

Duke University School of Medicine (Cont.)

Community Action Programs:

Duke, Bowman Gray and the University of North Carolina are jointly involved in a community-wide library reference service. This effort is now being funded by the North Carolina RMP. It has been funded for one year. The objective of the program is to make literature resources better known to the health community through the use of comprehensive bibliographic reference services.

Duke University received a contract from PHS to establish and evaluate a group medical practice in a community general hospital. One of the objectives of the project is to set up a model of a health care system to provide comprehensive care to a wide range of family groups. The group will have access to the facilities of the University Medical Center. It is hoped that groups of this type set up in small communities or attract young physicians to rural areas.

Three organizational components of the Duke Medical School (the Departments of Continuing Medical Education, Graduate Medical Education and Community Health Sciences) are jointly participating in a community health program. The proposed venture aims to involve the medical center in the problems of providing health care to small communities. The scope of the program includes the training of new health professionals, the re-definition of the tasks of existing health professionals, experimentation with health screening methods, the use of computers for data handling to support health care and the establishment of health care teams to experiment with innovative techniques in medicine. One objective of the computer portion of the plan has to do with the study of information in medicine and medical diagnostic methods.

Community Action Programs:

In 1966 seven medical libraries in North Carolina, Virginia and Kentucky installed TWX's in their libraries for the purpose of setting up the transmission of procedural information between libraries. The seven libraries were at Duke University, Bowman Gray School of Medicine, the University of North Carolina, the University of Virginia, the Medical College of Virginia, the University of Kentucky and the University of Louisville. The National Library of Medicine also joined the TWX network. As of January 1967, the network expanded to seven additional medical libraries, making a total of fourteen. Duke University also prepared an operating manual for the network entitled "Teletypewriter Exchange System for Inter-Library Communications." One of the stipulations of entering into the network was an agreement between participating institutions that loan requests must be answered within 24 hours of receipt of the message. In 1968 the manual was replaced by a "Library Teletype Directory" encompassing library TWX and TELEX installations for all types of libraries in the United States and Canada. A total of 263 institutions were listed in the 1968 directory, of which an estimated twenty per cent were medical collections.

Related Activities:

In 1966 Max Woodbury, Ph.D. mathematics, was given the job of planning a communications center that would incorporate the audio-visual facility, medical library and computing center. The initial plan called for new construction to house the three organizations. A later phase called for the functional melding of the three organizations into a single learning resources unit.

Duke is one of three universities in North Carolina linked via telephone lines to the Triangle Universities Computation Center in Durham. The voice grade lines are used to tie the central IBM 360/75 to an outlying complex of 360/30's and also to low and medium speed terminal devices. This network is supported by the National Science Foundation.

In 1967 F. Maxton Mauny, M.D. and Marilyn Parker, R.N., both of Duke University, worked at IBM, Yorktown Heights, New York, for six months assisting on the development of the CDSS (Clinical Decision Support System). The CDSS was an experimental computer program which planned to supplement the medical decisional process by way of crt interaction with an extensive data base. The joint effort of Duke and IBM led to a proposal from Duke to the PHS on a teaching and demonstration system for community health services. A small proportion of this proposal was approved but all computer services were excluded. The project office at PHS said that the general level of health services had not progressed far enough to justify remote computer experiments on decisional processes. The proposal, from which the computer effort was excluded, was a collaborative effort between the Departments of Continuing Medical Education, Graduate Medical Education and Community Health Sciences. The proposed program aimed to involve the University in the problems of providing health care to communities by training new health professionals, experimenting with screening methods and establishing groups of physicians to experiment with innovative techniques in medicine.

Duke University School of Medicine (Cont.)

Related Activities:

Dr. Thomas Kinney of Duke has been appointed the Chairman of the Automation of Clinical Laboratories Advisory Committee of the National Institute of General Medical Sciences. In this capacity he will be heading up a team of advisors for the Biochemistry and Biophysical Sciences Section of the Research Grants Branch. The executive secretary of the committee is Dr. Robert Melville at the Westwood Building.

Duke University School of Medicine (Cont.)

Common Carrier Services (1968):

Foreign exchange from Duke to Chapel Hill, open at Chapel Hill. Local wide band capability with a terminal connected to a computer.

The University of North Carolina School of Medicine
Chapel Hill, North Carolina 27514

Type: State supported

Enrollment: 288 (67-68)

Number of Medical Schools in North Carolina: 3

Clinical Facilities: The North Carolina Memorial Hospital of the University of North Carolina in Chapel Hill; Gravely Sanatorium; Watts Hospital in Durham; Wake County Memorial Hospital in Raleigh; Alamance County Hospital in Burlington; Rex Hospital in Raleigh; the State Mental Hospitals at Butner and Raleigh; Southeastern General Hospital in Lumberton; Moses H. Cone Memorial Hospital in Greensboro; and the Charlotte Memorial Hospital in Charlotte.

Medical Library: Staff, 13; Volumes, 92,600.

Personnel:

Dean.	Isaac M. Taylor, M.D.
Assistant Dean of Conp tuing Education.	William P. Richardson, M.D.
Medical Library Director. . . .	Miss Myrl Ebert

Statewide Statistics:

Total Resident Population	4,875,600
Non-Federal Physician Population	5,023
Counties.	100
Hospitals	137
Hospital Beds	17,002

The University of North Carolina School of Medicine (Cont.)

Community Action Programs:

The University is one of eight medical institutions in the United States utilizing a two-way radio technique for continuing medical education. The program is under the direction of Dr. William P. Richardson, Assistant Dean of Continuing Education. The system is similar to that of the Albany Medical College and the University of Wisconsin in that the radio is used for transmission only and questions from the audience are received via telephone. The audience hears the complete radio-telephone question and answer dialogue.

See also medical libraries program listed under Duke.

Related Activities:

The University of North Carolina received one of the seven grants from the National Center for Health Services Research and Development in June 1968, to establish a "Health Services Research Center." Dr. Arden C. Miller, the Vice-Chancellor for Health Sciences, will be the principal investigator. The central theme of the proposed Center is to explore and evaluate alternate ways of providing optimal health services. Studies will be conducted in several community settings on the redefinition of provisional roles and organizational features of practice accessibility of personal health services. Estimated funding for three years is $450,000.

One of the earliest studies of medical practice was conducted by Dr. Osler Peterson and others of the University's Division of Health Affairs in 1953-54. The object of the effort was to collect information on general practice for the use of institutions taking up the problem of medical education. The controversial report, published by the Journal of Medical Education, has since been supplemented by other studies by Menzel and Katz, Garvey and Griffith, Parker and Paisley, and others.

Common Carrier Services (1968):

The School of Medicine has a Centrex. Tie lines to other campuses. Private line to Greensboro, Charlotte, and Triangle University Computation Center. Wide band (50 kilobits capacity) to Durham. Some foreign exchange and dial TWX. Shared state Telpak. TV to Charlotte and Greensboro.

The University of North Dakota School of Medicine
Grand Forks, North Dakota 58202

Type: State supported

Enrollment: 90 (67-68)

Number of Medical Schools in North Dakota: 1

Clinical Facilities: St. Michael's Hospital and the Deaconess Hospital.

Medical Library: Data not recorded

Personnel:

Dean.	Theodore H. Harwood, M.D.
Medical Library Director. . . .	Miss Loretta Swift

Statewide Statistics:

Total Resident Population.	646,100
Non-Federal Physician Population.	574
Counties	53
Hospitals.	53
Hospital Beds.	3,520

The University of North Dakota School of Medicine (Cont.)

Related Activities:

Doctor Thomas Meyer of the University of Wisconsin reported that physicians in North Dakota have telephone access to the Wisconsin Dial-Access system. Attempts are being made in Wisconsin to involve the University in this effort.

The University of North Dakota School of Medicine (Cont.)

Common Carrier Services (1968):

Part of the CATS (Combined Automatic Telephone System) which is a state-wide network connecting all universities and civil agencies in North Dakota. CATS is connected to Washington via private lines.

Case Western Reserve University School of Medicine
Cleveland, Ohio 44106

Type: Privately endowed

Enrollment: 349 (67-68)

Number of Medical Schools in Ohio: 4

Clinical Facilities: University Hospitals; the Benjamin Rose Hospital; Cleveland Metropolitan General Hospital; Sunny Acres (Cuyahoga County Tuberculosis Hospital; Highland View Hospital); and Veterans Administration Hospital.

Medical Library: Volumes, 24,324.

Personnel:

Dean.	Frederick C. Robbins, M.D., D.Sc.
Coordinator of Continuing Medical Education.	Joseph M. Foley, M.D.
Medical Library Director. .	William Barr

Statewide Statistics:

Total Resident Population	10,517,200
Non-Federal Physician Population	13,456
Counties.	88
Hospitals	191
Hospital Beds	37,123

Related Activities:

An automated data processing medical record and charting procedure is being established in the Cleveland Metropolitan General Hospital, an affiliate of the University. This record system is an automated version of the system developed in the East Maine General Hospital, Bangor, Maine. Among other objectives, it is being designed for the purpose of building a data base of problem-oriented medical care information. It will be used as an aid in training and educating physicians and allied health personnel.

The Computing Center is under the direction of Professor Edward L. Glaser. The Center, equipped with a UNIVAC 1108 and a PDP 10, are not engaged in any computer network activities.

In July 1966 Case Western Reserve University (CWRU) and the Cleveland Medical Library Association (CMLA) agreed to the establishment of the Cleveland Health Sciences Library. CWRU turned over the administration of the libraries of the Schools of Medicine, Dentistry, and Nursing to CHSL and the Association turned over the Allen Memorial Library which it has operated since 1926. The Allen Library was and still is a membership library. Membership fees run from $25 per annum for doctorates, to $5 for residents, and no dues for students of CWRU. Faculty of CWRU must pay dues. The total collection of CHSL is 165,000 volumes and 1,700 current periodical subscriptions handled by a staff of 27. Annual circulation for all four libraries is 57,000, 40% of which is accounted for by local hospitals. The CHSL was recently incorporated into the Kentucky, Michigan, Ohio Regional Medical Library and is involved in the Northeastern Ohio RMP.

Related Activities: 2.

"Extramural Programs" of the National Library of Medicine awarded a $108,000 grant to Alan Rees of Case Western Reserve University and Dr. David Kronick, Librarian, Texas Medical School, San Antonio, to identify and assess the current health sciences library work force. The grant is entitled "Educational Needs in Medical Librarianship and Health Sciences Information". This study will supplement the health sciences library statistical survey being conducted by a committee of the AMA, MLA and AHA under the chairmanship of Susan Crawford at AMA.

Case Western Reserve University School of Medicine (Cont.)

Common Carrier Services (1968):

Data phone, 400 series. ETV has been proposed by AT&T.

University of Cincinnati College of Medicine
Cincinnati, Ohio 45219

Type: Privately endowed, with partial municipal support

Enrollment: 352 (67-68)

Number of Medical Schools in Ohio: 4

Clinical Facilities: The Cincinnati General Hospital; the Holmes Hospital; the Children's Hospital; the Children's Hospital Research Foundation; Veterans Administration Hospital; the Shrine Burn Hospital; and Christ Hospital Institute of Medical Research of the University of Cincinnati.

Medical Library: Data not available

Personnel:

Dean.	Clifford G. Grulee, Jr.,M.D.
Audio-Visual Coordinator.	Miss Merlyn P. McClure
Assistant Dean for Continuing Medical Education. . . .	James F. Schieve, M.D.
Medical Library Director.	Mr. Thomas H. Rees, Jr.

Statewide Statistics:

Total Resident Population	10,517,200
Non-Federal Physician Population	13,456
Counties.	88
Hospitals	191
Hospital Beds	37,123

Community Action Programs:

The University's Continuing Medical Education program is announced to the community by a publication titled, "CONMED". The 1968-1969 CONMED Bulletin lists 20 formal courses ranging from two full days each to one meeting per week for two semesters. The Bulletin also announces symposia, lectures, and special events of interest to the community.

Related Activities:

The Department of Environmental Health has been sponsoring the conceptual efforts of Stanley B. Gross, Ph.D., during 1967-1968 on future information systems for industrial hygiene and occupational health. The concept identifies an Environmental Health Analysis Center which will collect and evaluate information from the literature, reports, original data sources, Chemical Abstracts, Biological Abstracts, and other sources to meet the information needs of professionals in the field of environmental health. Information requirements include the biological organism, the agent, the environment, management, and legislation. Dr. Gross' definition of toxicological information includes air, water, and radiation pollutants as well as drugs and chemicals.

Thomas Rees, Jr., the overall Librarian of the College of Medicine Library, the Cincinnati General Hospital Library, the Kettering Laboratory Library, the College of Nursing and Health Library, and the Christ Hospital Institute of Medical Research Library, report that the colleges are only involved extramurally in supplying books and journals to doctors in the immediate area. Cincinnati will be working with Miss Joan Titley, Librarian of the University of Louisville Medical Library, in helping a selected few hospitals in improving their library services when Miss Titley's program is approved by the Ohio Valley RMP.

University of Cincinnati College of Medicine (Cont.)

Common Carrier Services (1968)

Nothing of significance

The Ohio State University College of Medicine
Columbus, Ohio 43210

Type: State supported

Enrollment: 585 (67-68)

Number of Medical Schools in Ohio: 4

Clinical Facilities: The University Hospital.

Medical Library: Volumes, 4,843.

Personnel:

Dean.	Richard L. Meiling, M.D.
Director of Center for Cont. Medical Education. .	William G. Pace, M.D.
Medical Library Director. .	Anne A. Warmington

Statewide Statistics:

Total Resident Population	10,517,200
Non-Federal Physician Population	13,456
Counties.	88
Hospitals	191
Hospital Beds	37,123

The Ohio State University College of Medicine (Cont.)

Community Action Programs:

The Ohio State University telelecture system is similar to the two-way radio system of Albany Medical College. Doctors John A. Prior, Assistant Dean, and William Pace, Director of the Center for Continuing Medical Education, are responsible for this program. Telelectures are transmitted to various hospitals in the State.

Related Activities:

Computer Assisted Instruction programs are used to teach medical dietetics, anatomy, histology, and a course in biochemistry. Programs in COBOL were originally written for an IBM 1401 and are now being converted to an IBM 360/40 with typewriter terminals. CAI terminals and self-instructional equipment in 27 carrels are being planned for a new library. The Office of Naval Research is currently supporting the development of a Tutorial Evaluation System (TES), a form of CAI to serve as both a tutorial and evaluative device.

Ohio State is reportedly a prominent producer of audio-visual materials in the health sciences. Robert E. Potts, Director of the Audio-Visual and Television Center, reports that the University is now in the process of cataloging their audio-visual materials program.

The University is one of six universities assisting a National Academy of Engineering Committee on the Interplay of Engineering with Biology and Medicine. The six institutions are Johns Hopkins, Carnegie-Mellon University, Massachusetts Institute of Technology, Ohio State University Research Foundation, University of Virginia, and the University of Washington. Each of the seven-month efforts, which were due to be completed on 30 September 1968, were to (1) develop prototype concepts for relating engineering to the physical, biological, medical, social, and management sciences; (2) to identify local civic and industrial resources and to study the operations of local health and medical care institutions and find problems that can be solved through multidisciplinary efforts; and (3) to develop prototype operational plans for interplay. The goal is to stimulate research and to obtain the best combination of resources to solve urgent medical and health care problems.

The Ohio State University College of Medicine (Cont.)

Common Carrier Services (1968):

Dial TWX in the library, hospital, and the administrative building. Telelecture system on radio to hospitals and doctors. Question/answer system. ETV on campus. Medical school has a private closed circuit TV to the hospital.

The University of Oklahoma School of Medicine
Oklahoma City, Oklahoma 73104

Type: State supported

Enrollment: 408 (67-68)

Number of Medical Schools in Oklahoma: 1

Clinical Facilities: The University Hospital and Out-Patient Clinics; The Oklahoma Children's Memorial Hospital; The Veterans Administration Hospital; and the Speech and Hearing Center.

Medical Library: Volumes, 12,643.

Personnel:

Dean	James L. Dennis, M.D.
Audio-Visual Coordinator	Leonard M. Eddy, M.L.S.
Professor of Continuing Medical Education	Kelly M. West, M.D.
Medical Library Director	Mrs. Elizabeth Hunt

Statewide Statistics:

Total Resident Population	2,454,000
Non-Federal Physician Population	2,437
Counties	77
Hospitals	110
Hospital Beds	8,692

The University of Oklahoma School of Medicine (Cont.)

Related Activities:

The Director of the Computing Center is Edward Brandt, M.D., Ph.D.; J. Wayne Beal, Associate Director. The Center has an IBM 1401 with three 1311 disks drives and four 7330 tape drives and an IBM 1800 with an A to D converter and on-line plotter. A coronary care network is proposed where the Center would be the central analytic station for six monitoring stations. Processor will be an IBM 360/40. Interface equipment to the monitoring stations has not yet been determined.

The University of Oklahoma School of Medicine (Cont.)

Common Carrier Services (1968):

Centrex with inward and outward WATS planned for 1970.

University of Oregon Medical School
Portland, Oregon 97201

Type: State supported

Enrollment: 325 (67-68)

Number of Medical Schools in Oregon: 1

Clinical Facilities: University of Oregon Medical School Hospitals and Clinics; Medical School Hospital; Doernbecher Memorial Hospital for Children; Multnomah Hospital; University State Tuberculosis Hospital; General Outpatient Clinic; and the Veterans Administration Hospital.

Medical Library: Volumes, (1965) 93,594; Income, (65-66) $156,673.

Personnel:

Dean	David W.E. Baird, M.D., LL.D.
Director of Continuing Medical Education	Myron R. Grover, Jr., M.D.
Medical Library Director	Miss Margaret E. Hughes

Statewide Statistics:

Total Resident Population	1,921,500
Non-Federal Physician Population	2,716
Counties	36
Hospitals	74
Hospital Beds	9,776

University of Oregon Medical School (Cont.)

Community Action Programs:

The University of Oregon has had a traveling circuit in post graduate education. It was originally established in 1966 and is now being expanded under RMP to deal with heart disease, cancer and stroke. During each circuit course, two lectures and a case history are presented over a 5½-hour period. Physician participants are asked to prescribe treatment and a subsequent regimen.

University of Oregon Medical School (Cont.)

Common Carrier Services (1968):

Outward intra-state WATS. Tandem network (a network where tie lines are coupled with foreign exchange). Private telephone system. Two way dial tie line which is on the Tandem network. Intra-state Telpak. Dial TWX in the library. AT&T has proposed some inter-state WATS.

Hahnemann Medical College
Philadelphia, Pennsylvania 19102

Type: Privately endowed

Enrollment: 430 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Hahnemann Hospital; Harrisburg Hospital; Philadelphia General Hospital; Misericordia Hospital; and Fitzgerald Mercy Hospital.

Medical Library: Volumes, 29,579; Income 964-65) $67,190.

Personnel:

Dean	Joseph R. DiPalma, M.D. (Acting)
Chairmann, Committee of Continuing Medical Education	John H. Moyer, III, M.D.
Medical Library Director	Mrs. Lucy Cooke

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties	67
Hospitals	235
Hospital Beds	50,739

Related Activities:

In 1966, Doctors Nodine and Reider developed a computer demonstration program for the retrieval of poison control information. The demonstration, on a CDC 160 A, was given to members of the poison control community at the 1966 New York meeting of the American Association for Poison Control Centers.

Dr. John Nodine developed a standard language for the diagnosis of cardiac failure. Seventy-three specific diagnostic classifications which may be used singly or in combination have been identified. Physicians at Hahnemann will be asked to enter diagnostic data on forms prepared according to these classifications. The forms, when completed by the physician, will be punched and stored in digital format. It is anticipated that this data will be used to identify case histories in the hospital.

Hahnemann Medical College (Cont.)

Common Carrier Services (1968):

They are due to complete a building in 1970 which will house a Centrex.

The Jefferson Medical College of Philadelphia
Philadelphia, Pennsylvania 19107

Type: Privately endowed

Enrollment: 686 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: The Curtis Clinic; Daniel Baugh Institute of Anatomy; Barton Memorial Division of the Chest; Jefferson Hospital; Lankenau Hospital; Methodist Hospital; Chestnut Hill Hospital; U.S. Naval Hospital; Misericordia Hospital; Philadelphia General Hospital; Cooper Hospital, Camden, New Jersey; The Lovelace Foundation, Albuquerque, New Mexico; Eastern Pennsylvania Psychiatric Institute; Friends Hospital; Haverford State Hospital, Haverford, Pennsylvania; Delaware State Hospital, New Castle, Delaware; Hunterdon Medical Center, Flemington, New Jersey; and Veterans Administration Hospital, Coatesville, Pennsylvania.

Medical Library: Volumes, 54,000; Income (64-65) $99,000.

Personnel:

Dean.	William F. Kellow, M.D.
Assistant Dean for Continuing Education.	John H. Killough, M.D., Ph.D.
Medical Library Director. . .	Robert T. Lentz

Statewide Statistics:

Total Resident Population.	11,706,300
Non-Federal Physician Population.	16,814
Counties	67
Hospitals.	235
Hospital Beds.	50,739

Related Activities:

The Jefferson Medical School was one of three institutions submitting proposals to the National Academy of Sciences for participation in the utilization of drug efficacy information. The efficacy information was being collected by 30 scientific panels of a special study group. At the time of the proposal, the study was at its mid-point and plans were being made to conduct experiments on the distribution of the information.

The Jefferson Medical College of Philadelphia (Cont.)

Common Carrier Services (1968):

Private line teletype to Blue Cross.

The University of Pennsylvania School of Medicine
Philadelphia, Pennsylvania 19104

Type: Privately endowed

Enrollment: 519 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Hospital of University of Pennsylvania; Graduate Hospital; Philadelphia General Hospital; Pennsylvania Hospital; Children's Hospital; Presbyterian Hospital; Camden Municipal Hospital; Hunterdon Medical Center, Flemington, New Jersey; Veterans Administration Hospital of Philadelphia; Misericordia Hospital; and two psychiatric hospitals.

Medical Library: Volumes, 26,014

Personnel:

Dean	Samuel Gurin, Ph.D., Sc.D.
Director of Continuing Medical Education	Paul Nemir, Jr., M.D.
Medical Library Director	Miss Frances R. Houston

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties	67
Hospitals	235
Hospital Beds	50,739

Related Activities:

WCAU-TV, a commercial television station, presented 95 thirty-minute programs in medicine between September 1967 and May 1968. Howard Balin, M.D., and six other medical consultants designed the series. Dr. Balin is Chief of the Gynecic Research Unit at the University of Pennsylvania Hospital and Assistant Professor of OB-GYN at the University of Pennsylvania. The series was produced as a public service of Station WCAU.

The Computer Center of the University is located at 3401 Market Street, Philadelphia. Acting Director is Dr. George Schrenk. The computer network extends to various locations within the University and to the Drexel Institute of Technology and Villanova University. Equipment includes two IBM 360/65's, an IBM 7040, and a PDP 6.

The Periodic Health Examination (PHE) Cooperative Research Project is an on-going cooperative effort involving clinics which conduct regular health examinations. Eight of these clinics (Benjamin Franklin, Philadelphia; General Electric Company, Schenectady; Greenbriar, White Sulphur Springs; Medical Associates of Massachusetts, Boston; University of Pennsylvania Diagnostic Clinic, Philadelphia; University of Pittsburgh Executive Health Evaluation Clinic, Pittsburgh; U.S. Steel Corporation, Pittsburgh; and Vincent Astor, New York) contributed data to a study on the physician's use of objective data in clinical diagnosis. In a report by Dr. Katherine Elsom and others, it was concluded that there was an uncertainty concerning the meaning of patient data and caution should be exercised in setting up rigid criteria for diagnosis.

The University of Pennsylvania School of Medicine (Cont.)

Common Carrier Services (1968):

They have four tie lines on two federal telecommunications systems. Foreign exchange to Princeton not in the medical school.

The Pennsylvania State University College of Medicine - The
Milton S. Hershey Medical Centers
Hershey, Pennsylvania 17033

Type: Privately supported

Enrollment: 40 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Data not recorded

Medical Library: Data not recorded

Personnel:

Dean	George T. Harrell, M.D.
Director of Continuing Medical Education	George T. Harrell, M.D.
Medical Library Director	Fred D. Bryant

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties	67
Hospitals	235
Hospital Beds	50,739

Related Activities:

The new Hershey Medical Center is developing a community service health model to determine the relationships between social and medical factors in disease processes. The private practice of two physicians in Hershey will be incorporated into this model. The physicians will have private offices in the teaching hospital and their three thousand patients will voluntarily be available for the training of medical students and house staff.

The University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania 15213

Type: State related

Enrollment: 388 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Presbyterian-University Hospital; Magee-Women's Hospital; Eye and Ear Hospital; Children's Hospital of Pittsburgh; Western Psychiatric Institute and Clinic; Falk Clinic; Mercy Hospital; St. Francis General Hospital and Rehabilitation Center; Allegheny General Hospital; Montefiore Hospital; Tuberculosis League of Pittsburgh; C. Howard Marcy State Hospital; and the Veterans Administration Hospital, Leech Farm and University Drive.

Medical Library: Volumes, 119,181.

Personnel:

Dean.	F. Sargent Cheever, M.D., Sc.D.
Medical Library Director. . .	Dr. Carroll F. Reynolds

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties.	67
Hospitals	235
Hospital Beds	50,739

Community Action Programs:

In November 1968 the Medical Library of the University of Pittsburgh submitted a comprehensive proposal covering a period of five years to the Western Pennsylvania RMP. According to Dr. Carroll Reynolds, the Medical Librarian, the $900,000 proposed effort would eventually lead to one of the nation's most comprehensive library services for the practicing physician. In addition to providing free photocopy services to all physicians and health personnel, it was proposed that an extensive training program would be initiated for hospital librarians. It was proposed that the central library would include extensive film holdings. The latter presumably reflects the interest of Dr. Stone, the University Librarian, who is an expert in audio-visual materials.

Related Activities:

Dr. Orrin Taulbee is the Director of the Computing Center. Equipment on the main campus includes two IBM 360/50's, IBM 7090, IBM 360/20, two IBM 1130's, two IBM 1401's, a PDP 4, thirty-seven IBM 2741's and four IBM 1050's. On the branch campus there is an IBM 1050 and an IBM 2741. A time shared facility serving all areas of the main campus and two regional campuses is planned. Some use by local high schools is planned.

The University of Pittsburgh School of Medicine (Cont.)

Common Carrier Services (1968):

They have 16 tie lines to the main campus. Transmit lectures and lab work. Dial TWX in the library.

Temple University School of Medicine of the Commonwealth
System of Higher Education
Philadelphia, Pennsylvania 19140

Type: State related

Enrollment: 557 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Temple University Hospital; Episcopal Hospital; Albert Einstein Medical Center; Philadelphia General Hospital; Shriners Hospital for Crippled Children; the Skin and Cancer Hospital; St. Christopher's Hospital for Children; Germantown Hospital; Wills Eye Hospital; Moss Rehabilitation Hospital; and the Public Health Center.

Medical Library: Volumes, 29,349.

Personnel:

Dean.	Robert M. Bucher, M.D.
Audio-Visual Coordinator. . .	Stanton W. Saltzman, M.A.
Director of Continuing Medical Education.	Daniel S. Fleischer, M.D.
Medical Library Director. . .	Miss Ruth Y. Diamond

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties.	67
Hospitals	235
Hospital Beds	50,739

Temple University School of Medicine of the Commonwealth System of Higher Education (Cont.)

Related Activities:

Dr. Daniel S. Fleischer reports that the Health Science Center has been and still is engaged in continuing education for members of the health community. These efforts are fragmented and fairly traditional in character. In 1968, sixteen courses and symposia were offered. Temple is not involved in extension programs, two-way radio lectures, television programs, etc.

Temple University School of Medicine of the Commonwealth System of Higher Education (Cont.)

Common Carrier Services (1968):

In the very near future they will be on a Common Control Switching Arrangement (CCSA) with the state of Pennsylvania.

Woman's Medical College of Pennsylvania
Philadelphia, Pennsylvania 19129

Type: Privately endowed

Enrollment: 224 (67-68)

Number of Medical Schools in Pennsylvania: 8

Clinical Facilities: Hospital of the Woman's Medical College; Eastern Pennsylvania Psychiatric Institute; Germantown Hospital; Veterans Administration Hospital; Wills Eye Hospital; Booth Memorial Hospital; Episcopal Hospital; Inglis House; Landis State Hospital; and Valley Forge Army Hospital.

Medical Library: Volumes, 18,500; Income (64-65) $39,300.

Personnel:

Dean.	Glen R. Leymaster, M.D.
Audio-Visual Coordinator. .	Anne Insinger, M.L.
Medical Library Director. .	Miss Ida J. Draeger

Statewide Statistics:

Total Resident Population	11,706,300
Non-Federal Physician Population	16,814
Counties.	67
Hospitals	235
Hospital Beds	50,739

Common Carrier Services (1968):

Nothing of significance.

Brown University Division of Biological and Medical Sciences
Providence, Rhode Island 02912

Type: Privately endowed

Enrollment: 57 (67-68)

Number of Medical Schools in Rhode Island: 1

Clinical Facilities: Data not recorded

Medical Library: Volumes, 1,315,041; Income (64-65) $898,398.

Statewide Statistics:

Dean.	Merton P. Stoltz, Ph.D.
Director of Continuing Medical Education. . . .	H.S.M. Uhl, M.D.
Medical Library Director.	David A. Jonah

Statewide Statistics:

Total Resident Population.	894,300
Non-Federal Physician Population.	1,336
Counties	5
Hospitals.	16
Hospital Beds.	3,252

The Medical College of South Carolina School of Medicine
Charleston, South Carolina 29401

Type: State supported

Enrollment: 335 (67-68)

Number of Medical Schools in South Carolina: 1

Clinical Facilities: The Medical College Hospital; Charleston County General Hospital; the South Carolina State Hospital; and Veterans Administration Hospital.

Medical Library: Volumes, 38,670; Income (64-65) $19,080.

Personnel:

Dean.	Franklin C. Fetter, M.D.
Assistant Dean for Continuing Medical Education. .	Dale Groom, M.D.
Medical Library Director. . .	Miss Desmond Koster

Statewide Statistics:

Total Resident Population	2,554,900
Non-Federal Physician Population	2,046
Counties.	46
Hospitals	65
Hospital Beds	8,239

312

Community Action Programs:

Dr. J. C. Chambers of the Medical College is the Director of the South Carolina RMP. The SCRMP is still in the planning stages. Four activities now in progress include the development of a central community registry, the development of a region-wide cooperative cancer therapy program based at the Marion County Memorial Hospital, planning for a hospital system in Greenville and one for the Columbia Hospital.

The Medical College of South Carolina School of Medicine(Cont.)

Common Carrier Services (1968):

Nothing of significance

The University of South Dakota School of Medicine
Vermillion, South Dakota 57609

Type: State supported

Enrollment: 93 (67-68)

Number of Medical Schools in South Dakota: 1

Clinical Facilities: Sacred Heart Hospital; the Yankton State Hospital; McKennan Hospital; Sioux Valley Hospital; and Royal C. Johnson Memorial Hospital.

Medical Library: Volumes, 16,944; Income (65-66) $25,120

Personnel:

Dean	George W. Knabe, Jr., M.D.
Audio-Visual Coordinator	Willard O. Read, Ph.D.
Medical Library Director	Data not recorded

Statewide Statistics:

Total Resident Population	707,700
Non-Federal Physician Population	524
Counties	67
Hospitals	45
Hospital Beds	3,033

Related Activities:

The University of South Dakota, Creighton University, and the University of Nebraska submitted a proposal to the Nebraska-South Dakota RMP in Lincoln, Nebraska, for an audio-visual continuing education service. Audio-visual production facilities were proposed for each of the schools for the production of 8 mm. films to be sent to all physicians. A two-way telephone system to all hospitals was also proposed. These proposals were funded by the DRMP in July 1968 and are scheduled for review in November.

The University of South Dakota School of Medicine (Cont.)

Common Carrier Services (1968):

Four intra-state, outward, Full Period WATS. They receive some ETV from Nebraska. Private line on to the state-wide Tandem network is planned.

Meharry Medical College School of Medicine
Nashville, Tennessee 37208

Type: Privately endowed

Enrollment: 250 (67-68)

Number of Medical Schools in Tennessee: 3

Clinical Facilities: George W. Hubbard Hospital; Central State Hospital; and Veterans Administration Hospital.

Medical Library: Volumes 16,925.

Personnel:

Dean.	Ralph J. Cazort, M.D.
Audio-Visual Coordinator. . .	Horace M. Frazier, M.D.
Director of Continuing Medical Education.	Frank A. Perry, M.D.
Medical Library Director. . .	Mrs. Patricia M. Strong

Statewide Statistics:

Total Resident Population	3,812,300
Non-Federal Physician Population	4,344
Counties.	95
Hospitals	115
Hospital Beds	14,225

Meharry Medical College School of Medicine (Cont.)

Community Action Programs:

A continuing medical education program is being expanded under the auspices of the Tennessee Mid-South RMP. The education program will consist of refresher courses for clinicians, the utilization of audio-visual aids and closed circuit TV. A novel aspect of the program is the use of last-year medical residents as rural practitioners while those physicians are attending two-week courses at Meharry.

Related Activities:

Dr. Frank Perry, the Meharry Coordinator of the Tennessee Mid-South Regional Medical Program, reported that the following RMP activities were taking place at Meharry:

1. Dr. Ralph Cazort is negotiating with George Peabody College to have them present a course in learning theory to Meharry instructors.
2. Meharry recently acquired a Sigma VII computer which will be used in conjunction with the Vanderbilt University computer to service a Multi-test Screening Laboratory.
3. Meharry is part of a Vanderbilt program for a computer-assisted radiotherapy program.
4. Meharry is assisting Vanderbilt on the development of a computerized state-wide cancer registry.

Meharry Medical College School of Medicine (Cont.)

Common Carrier Services (1968):

Out-patient data phone to the Vanderbilt computer which keeps a record of patients. Private line to Vanderbilt.

The University of Tennessee College of Medicine
Memphis, Tennessee 38103

Type: State supported

Enrollment: 688 (67-68)

Number of Medical Schools in Tennessee: 3

Clinical Facilities: City of Memphis Hospitals; William F. Bowld Hospitals; Frank T. Tobey Memorial Children's Hospital; West Tennessee Tuberculosis Hospital; Le Bonheur Children's Hospital; Les Passees Rehabilitation Center; Memphis Speech and Hearing Center; Gailor Diagnostic Clinic; Tennessee Psychiatric Hospital and Research Institute; Baptist Memorial Hospital; Kennedy Veterans Administration Hospital; St. Jude's Pediatric Research Hospital; the Variety Children's Heart Institute; and James K. Dobbs Research Institute.

Medical Library: Volumes, 64,173; Income (64-65) $115,631.

Personnel:

Dean.	M. K. Callison, M.D.
Director of Continuing Medical Education.	Wallace H. Mayton, Jr.
Medical Library Director. . .	Miss M. Irene Jones

Statewide Statistics:

Total Resident Population	3,812,300
Non-Federal Physician Population	4,344
Counties.	95
Hospitals	115
Hospital Beds	14,225

Community Action Programs:

The Department of Continuing Education, under the directorship of Wallace Mayton, was organized under the University of Tennessee Medical Units in 1952 to provide members of the health professions with opportunities for study beyond their earlier, formalized training. Since 1952, over 250 courses have been offered to physicians primarily in general practice. The courses are offered in the University and various community hospitals throughout the state. Television, radio, etc., have not been utilized. The University hopes to use these media in the future through the RMP.

Related Activities:

The University of Tennessee Medical School collaborated with the City of Memphis Hospitals on a project called Study Patient Activity Recording Evaluation (SPARE). The object of SPARE was to find ways and means to utilize computers in medical records and hospital problems. In January 1966 indexing started on all completed and signed records for the purpose of maintaining census, statistical procedures and the disease and operative index. Record input is via mark-sensed sheets which are transferred to magnetic tape by optical reader. Disease and operative index files for the period of coverage have been eliminated.

The University of Tennessee College of Medicine (Cont.)

Common Carrier Services (1968):

Private lines to one hospital. Planning a closed circuit TV system from the University to the hospital.

Vanderbilt University School of Medicine
Nashville, Tennessee 37203

Type: Privately endowed

Enrollment: 223 (67-68)

Number of Medical Schools in Tennessee: 3

Clinical Facilities: University Hospital; Davidson County Tuberculosis Hospital; Central State Hospital; Nashville General Hospital; and Nashville Veterans Administration Hospital.

Medical Library: Volumes, 67,362.

Personnel:

Dean	Randolph Batson, M.D.
Director of Continuing Education	Joseph A. Little, M.D.
Medical Library Director	Miss Eleanor G. Steinke

Statewide Statistics:

Total Resident Population	3,812,300
Non-Federal Physician Population	4,344
Counties	95
Hospitals	115
Hospital Beds	14,225

Community Action Programs:

The continuing education program at Vanderbilt University under Dr. John Chapman is being supported by the Tennessee Mid-South RMP. Educational activities will be directed to the communities of Hopkinsville and Chattanooga.

An educational center is being established at the Baroness Erlanger Hospital, a 651-bed hospital in Chattanooga. The center will be an outlying extension of the continuing education program at Vanderbilt. It is planned that educational programs will be extended to residents and local physicians of Chattanooga. Part of the plan calls for the expansion of the medical library. Videotape materials from Vanderbilt will be used in the hospital.

The Vanderbilt plan proposes to establish continuing education centers at a number of community hospitals. One of the education centers will be at the Jessie Stuart Memorial Hospital in Hopkinsville. This plan will also extend into Murray, Princeton and Cadiz, Kentucky. Whereas the Hoskinsville and Chattanooga affiliations with Vanderbilt are for the purpose of continuing education, the ventures in Kentucky are for the establishment of coronary care units which is part of Vanderbilt's program to establish a network of such units throughout the Tennessee Mid-South region.

Related Activities:

Vanderbilt University is offering one to three month training periods for technologists. Special training will be provided to practicing radiologists at two-hour monthly seminars presided over by eminent radiologists.

The University Computing Center, under the direction of Dr. George E. Hayman, eventually plans to serve Peabody, Fisk and Meharry with computing services. Communications to the Vanderbilt computer will be from remote campuses. Equipment at Vanderbilt includes an IBM 7072, SDS SIGMA 7, IBM 1401 (2), PDP 9, SDS SIGMA 2, UNIVAC DCT 2000, SCC 650, IBM 1800 and RCA 110A.

Vanderbilt University School of Medicine (Cont.)

Common Carrier Services (1968):

Outward WATS, zone 5, system. Two Full Period lines (private) going to Franklin Tennessee Hospital. One Full Period line going to Hopkinsville Hospital, for EKG and consulting work. Dial TWX in the library. University owned closed circuit TV. Centrex planned by 1970 or 1971.

Baylor University College of Medicine
Houston, Texas 77025

Type: Privately endowed

Enrollment: 338 (67-68)

Number of Medical Schools in Texas: 4

Clinical Facilities: Ben Taub General Hospital; Jefferson Davis Hospital; Methodist Hospital; Veterans Administration Hospital; Texas Children's Hospital; Texas Institute for Rehabilitation and Research; St. Luke's Episcopal Hospital; and Houston State Psychiatric Institute for Research and Training.

Medical Library: Staff, 11; volumes 80,224;

Personnel:

Dean for Medical Affairs. . .	Open
Audio-Visual Coordinator. . .	Robert D. MacIntyre
Medical Library Director. . .	Miss Virginia Parker

Statewide Statistics:

Total Resident Population . .	10,650,000
Non-Federal Physician Population	11,461
Counties.	254
Hospitals	460
Hospital Beds	37,471

Related Activities:

A PHS-supported project at Baylor University is attempting to develop improved techniques for the prediction of surgical risk. At the present time physicians can identify those patients who are poor risks as candidates for surgery and those individuals who present little risk in surgery. The purpose of this project is to identify the large group of patients who fall in between these two extremes. The availability of improved techniques will permit a better classification of patients entering into surgery.

In 1965, Dr. James Ramey, of the Council on Medical Television (previously affiliated with the Institute for the Advancement of Medical Communication) reported that the Departments of Physiology and Rehabilitation employed television for pre-doctoral education.

Baylor does not have extramural programs in medicine using audio-visual materials. According to Russell Clem, Director of Public Relations, speaking for Robert MacIntyre, Audio-Visual Coordinator, Baylor has been without funds for projects of this type and, even if funds were available, there is a prevailing attitude among non-university physicians in their area that would preclude the use of these materials for extramural educational programs.

Baylor is a member of the Texas Medical Center in Houston. When the Center was formed an agreement was reached that Baylor would refrain from duplicating functions of other schools. The University of Texas, which is also a member, has a school for continuing education. By agreement, therefore, Baylor cannot duplicate this function.

Baylor University College of Medicine (Cont.)

Common Carrier Services (1968):

Closed circuit TV to the hospital consisting of both data and video. Private microwave to 9 hospitals and the University of Texas Medical Branch planned. Broad band lines to the medical center IBM 360 computer planned.

The University of Texas Medical Branch
Galveston, Texas 77550

Type: State supported

Enrollment: 589 (67-68)

Number of Medical Schools in Texas: 4

Clinical Facilities: The Medical Branch Hospitals, including the John Sealy Hospital; Children's Hospital; Ziegler Hospital; Randall Pavillion; Galveston State Hospital (Psychopathic); and the Shriners' Burns Institute and Moody State School for Cerebral Palsied Children.

Medical Library: Volumes, 100,000.

Personnel:

Dean.	Truman G. Blocker, Jr., M.D.
Medical Library Director. . .	Miss Elisabeth D. Runge

Statewide Statistics:

Total Resident Population	10,650,000
Non-Federal Physician Population	11,461
Counties.	254
Hospitals	460
Hospital Beds	37,471

Community Action Programs:

Dr. Joe P. Tupin, of the Department of Psychiatry, is the coordinator of a "Text on Tape" program for teaching psychiatry which will be using selected videotapes contributed by a number of medical schools. The medical institutions participating in this proposed program include: Baylor, Emory, Mississippi, Georgia, South Carolina and Virginia. This program is being planned in cooperation with the Southern Regional Education Board in Atlanta. The primary purpose of the program is to develop didactic teaching materials from clinical videotapes. Indexing and cataloging of the videotapes will be required. Some preliminary overtures for financial support have been made to the Public Health Service Division of Physician Manpower.

The University of Texas Medical Branch (Cont.)

Related Activities:

The University of Texas is the focus of the Texas Regional Medical Program activity. Other major participants in the RMP are Baylor University College of Medicine and the Texas Medical Association. The Texas RMP activities are closely interrelated to the plans and programs of the Texas Educational Board and the State Legislature. In December 1967, under the auspices of the State Educational System, a complete list of medical facilities in the State was compiled. According to that report, there are 20 major health science libraries located in the eastern half of the State. The western half of the State is not prominent in medical library activities.

The University of Texas Medical Branch (Cont.)

Common Carrier Services (1968):

Two full time, outward, intra-state WATS. One foreign exchange to Houston, open at Houston, and one foreign exchange to Texas City, open at Texas City. Dial TWX and some closed circuit TV. ETV planned in less than one year.

The University of Texas Medical School at San Antonio
San Antonio, Texas 78212

Type: State supported

Enrollment: Data not recorded

Number of Medical Schools in Texas: 4

Clinical Facilities: Robert B. Green Memorial Hospital and Southton Convalescent Sanatorium.

Medical Library: Data not recorded

Personnel:

Dean	F. C. Pannill, M.D.
Medical Library Director	David A. Kronick

Statewide Statistics:

Total Resident Population	10,650,000
Non-Federal Physician Population	11,461
Counties	254
Hospitals	460
Hospital Beds	37,471

The University of Texas Southwestern Medical School
Dallas, Texas 75235

Type: State supported

Enrollment: 460 (67-68)

Number of Medical Schools in Texas: 4

Clinical Facilities: Parkland Memorial Hospital; Woodlawn Hospital; Baylor University Hospital; Methodist Hospital; St. Paul Hospital; the Children's Medical Center, Scottish Rite Hospital; the Veterans Administration Hospital at Dallas; Timberlawn Sanitarium; Terrell State Hospital; and the U.S. Public Health Service Hospital and John Peter Smith Hospital in Fort Worth.

Medical Library: Volumes, 70,035.

Personnel:

Dean.	Charles C. Sprague, M.D.
Audio-Visual Coordinator. . .	Open
Medical Library Director. . .	Mrs. Violet M. Baird

Statewide Statistics:

Total Resident Population	10,650,000
Non-Federal Physician Population	11,461
Counties.	254
Hospitals	460
Hospital Beds	37,471

The University of Texas Southwestern Medical School (Cont.)

Common Carrier Services (1968):

Ten tie lines to Parkland Hospital. Three tie lines to Childrens Medical Center. These are two-way dial repeating lines.

University of Utah College of Medicine
Salt Lake City, Utah 84112

Type: State supported

Enrollment: 230 (67-68)

Number of Medical Schools in Utah: 1

Clinical Facilities: University Hospital; the William H. Groves Latter-Day Saints Hospital; the Holy Cross Hospital; St. Mark's Hospital; Shriners Crippled Children's Hospital; L.D.S. Primary Children's Hospital; Dee Hospital, Ogden; and the local Veterans Administration Hospital.

Medical Library: Data not recorded

Personnel:

Dean	Kenneth B. Castleton, M.D., Ph.D.
Division of Continuing Medical Education	C. Hilmon Castle, M.D.
Medical Library Director	Miss Ann Loftin

Statewide Statistics:

Total Resident Population	1,007,600
Non-Federal Physician Population	1,303
Counties	29
Hospitals	31
Hospital Beds	2,748

Community Action Programs:

Librarians and medical faculty at the University of Utah are collaborating on an information reference service and medical consultation. The object of this effort is to provide information to clinicians on new stroke diagnostic and care methods and in those situations that the literature is not sufficient, a backup of 24-hour consultation by a medical specialist will be available. Collaborating on this effort are the Medical Sciences Library, the College of Medicine Medical Library, the Division of Post Graduate Education and the College of Medicine.

The University Hospital, Holy Cross Hospital and Dee Memorial Hospital will be the remote terminals to a computer based system for the collection of physiological data operating out of the Latter-Day Saints Hospital in Salt Lake City. Vectocardiographic signals, pulmonary function data, pressures, oxygen saturation and various other physiological data will be transmitted to the Latter-Day Saints Hospital for the purpose of establishing a set of data which will assist physicians in making diagnoses. The data will also be used to develop programmed learning courses. The principal investigator of this effort is Homer Warner, M.D.

Two-way radio programs in medicine were initiated in Utah five years ago. Approximately four to six programs are presented each month. This radio system will be expanded from the current tie-in to 11 hospitals, all located in or near Salt Lake City, to an additional 10 remote hospitals. One-hour medical programs are presented to the 21-hospital audience. Questions from the original 11 hospitals will be received via the two-way radio system and by telephone from the 10 hospitals recently added to the network. The radio programs are recorded on tape to allow reruns to be scheduled at various times. This radio conference system is quite similar to the networks in Wisconsin and upstate New York.

Community Action Programs:

For the past nine years, the University of Utah has been broadcasting television programs on medicine to physicians in Utah. The success of this program led to one-hour ETV programs broadcast one a week six months out of every year via cable to most of Utah and some areas of Idaho, Montana and Wyoming. This TV continuing education system will be expanded to include the ability to replay pre-recorded videotapes. In 1968 Ampex 7000 recorders will be placed in 12 major hospitals. In addition, Vidicon cameras and monitors will also be provided to these hospitals. The equipment will be used for continuing education of physicians and other allied health personnel and by health care personnel for self-assessment and instruction.

The University of Utah, under the auspices of the Intermountain Regional Medical Program, has established the "Communication and Information Exchange Service" (CIES). The purpose of the service is to distribute information to medical personnel and the public on the activities of the RMP, and also to obtain information on the attitudes of the community regarding the program. The University and others will be testing certain elements of consumer attitude periodically to determine how effective medicine is to the medical and lay communities.

Related Activities:

The American Association of Medical Television Broadcasters was organized under the leadership of the University of Utah. This is an organization with 21 member institutions who produce, distribute, and loan medical videotapes. The Association published a catalog listing more than 100 videotapes in 1967/68. The Association membership includes 13 medical schools in the United States, 2 medical schools in Canada, 3 medical societies, 2 non-profit organizations and one federal agency.

The Inter-Mountain Regional Medical Program, of which the University is a member, provides telephone consultation services to local physicians. The RMP maintains a consulting staff which is available via telephone on a 24-hour basis. The consulting resource is intended to be used when the local physician feels that the required techniques and facilities are not available locally. If requested, the consultant will travel to see the patient.

The Latter Day Saints Hospital, a clinical affiliate of the University of Utah College of Medicine, has developed a software and hardware system known as MEDLAB for cardiovascular studies and clinical applications. A Control Data Corporation 3200 has been used since June 1964 for research studies. Since 1967 the system has also been servicing clinical facilities. Presently, 20 terminals, located in six medical areas at distances from a few miles to 50 miles from the central facility, are used on problems of heart catheterization, nervous system studies, and screening clinics. The system includes both a CDC 3200 and a CDC 3300. The 3200 is used for research and program debugging while the 3300 is used strictly for operational clinical applications.

University of Utah College of Medicine (Cont.)

Common Carrier Services (1968):

Four private lines connected to a state inward and outward WATS. Data lines to a Univac 1108 computer. Dial TWX in the library. Closed circuit TV and microwave. State radio system transmits to hospitals in six states. A three station microwave planned for the state of Utah which they will be part of.

The University of Vermont College of Medicine
Burlington, Vermont 05401

Type: State supported

Enrollment: 203 (67-68)

Number of Medical Schools in Vermont: 1

Clinical Facilities: The Medical Center Hospital of Vermont, Inc.

Medical Library: Volumes, 30,000.

Personnel:

Dean	Edward C. Andrews, Jr., M.D.
Director of Continuing Medical Education	George W. Welsh, M.D.
Medical Library Director	George H. Hunter

Statewide Statistics:

Total Resident Population	397,400
Non-Federal Physician Population	700
Counties	14
Hospitals	24
Hospital Beds	1,931

The University of Vermont College of Medicine (Cont.)

Related Activities:

An IBM 360 to be used as a time-sharing computer is planned for 1970. Initially they will access seven on-campus locations with IBM 1050's. Planned expansion will include the whole state including high schools.

The University of Vermont College of Medicine (Cont.)

Common Carrier Services (1968)

One TWX in the Medical Library. ETV broadcasting station which broadcasts to the public.

Medical College of Virginia School of Medicine
Richmond, Virginia 23219

Type: State supported

Enrollment: 419 (7-68)

Number of Medical Schools in Virginia: 2

Clinical Facilities: The Medical College of Virginia Hospitals and Clinics.

Medical Library: Volumes 80,000; Income (64-65) $108,000.

Personnel:

Dean	Kinloch Nelson, M.D.
Assistant Dean, Continuing Med. Education	Charles M. Caravata, M.D.
Medical Library Director	Mrs. June Leath Huntley

Statewide Statistics:

Total Resident Population	4,446,900
Non-Federal Physician Population	5,027
Counties	102
Hospitals	97
Hospital Beds	13,846

Related Activities:

See Jefferson Medical School, "Proposed Experiment on Drug Efficacy."

Melvin C. Schaffer, the Director of the Visual Education Department, reports that the College is in the process of preparing a computer catalog of videotapes. As of November 1968, part of the inventory of tapes had been loaded into machine format. It was estimated that the computer catalog would be completed by the first part of 1969.

Common Carrier Services (1968):

Access to a Common Control Switching Arrangement (CCSA), intra-state, inward and outward. Voice-grade cable from building to building. Dial TWX in the library. Closed circuit TV which sends and receives for the medical college only. State CCSA in on Telpak.

The University of Virginia Medical School
Charlottesville, Virginia 22901

Type: State supported

Enrollment: 301 (67-68)

Number of Medical Schools in Virginia: 2

Clinical Facilities: The University Hospital; University of Virginia Children's Rehabilitation Center; The McIntire Tumor Clinic; and The Blue Ridge Sanatorium.

Medical Library: Volumes, 1,367,293.

Personnel:

Dean	Thomas H. Hunter, M.D.
Assistant Dean, Continuing Education	Charles L. Crockette, Jr., M.D.
Medical Library Director	John Cook Wyllie

Statewide Statistics:

Total Resident Population	4,446,900
Non-Federal Physician Population	5,027
Counties	102
Hospitals	97
Hospital Beds	13,846

Related Activities:

The University of Virginia is one of six universities assisting a National Academy of Engineering Committee on the Interplay of Engineering with Biology and Medicine. The six institutions are Johns Hopkins, Carnegie-Mellon University, Massachusetts Institute of Technology, Ohio State University Research Foundation, University of Virginia, and the University of Washington. Each of the seven month efforts, which were due to be completed on 30 September 1968, were to (1) develop prototype concepts for relating engineering to the physical, biological, medical, social, and management sciences; (2) to identify local civic and industrial resources and to study the operations of local health and medical care institutions and find problems that can be solved through multidisciplinary efforts; and (3) to develop prototype operational plans for interplay. The goal is to stimulate research and to obtain the best combination of resources to solve urgent medical and health care problems.

The University of Virginia Medical School (Cont.)

Common Carrier Services (1968):

State-wide Common Control Switching Arrangement (CCSA). Twenty foreign exchange private lines to Bethesda and Fairfax. TWX. Closed circuit TV on campus. Within two years, data TV for the medical school with wide band data teletype inquiry of the computer on core to core operation.

University of Washington School of Medicine
Seattle, Washington 98105

Type: State supported

Enrollment: 328 (67-68)

Number of Medical Schools in Washington: 1

Clinical Facilities: University Hospital; King County Hospital; Children's Orthopedic Hospital; the U.S. Public Health Service Hospital; and the Veterans Administration Hospital.

Medical Library: Data not recorded

Personnel:

Dean	John R. Hogness, M.D.
Audio-Visual Coordinator	Boyd Baldwin, M.A.
Medical Library Director	Data not recorded

Statewide Statistics:

Total Resident Population	3,067,200
Non-Federal Physician Population	4,343
Counties	39
Hospitals	107
Hospital Beds	9,303

University of Washington School of Medicine (Cont.)

Community Action Programs:

During the 1967-1968 academic year, the University of Washington School of Medicine offered 82 courses to physicians and paramedical personnel as part of its program on Continuing Medical Education. The courses were attended by 7,487 persons of whom 5,925 were M.D.'s. The courses were given throughout the State of Washington.

The University has been funded by the Washington-Alaska RMP to develop a pilot two-way radio broadcast program to present continuing education topics to 30 receiving stations. Dr. William O. Robertson will be the director of a project which will be preparing 20-minute lectures which will be compatible with slides to be projected locally during the broadcast. If the pilot program is successful, the possibility of expanding the program to meet the needs of the entire region will be explored. The pilot program will include six lectures on heart disease, cancer and stroke.

Dr. John Lein, of the Department of OBGYN of the University of Washington, who is also the Director of Continuing Education for the Washington-Alaska RMP, is a vigorous user of audio-visual materials for OB patient counseling. In 1968, he received $522,000 to develop a continuing education program for the entire Washington-Alaska region. The program calls for the creation of a distribution system and the production of TV and audio materials to meet the needs of the medical and health personnel in those areas. In keeping with his past practice on audio-visual materials, production will be done on subcontract. The audio-visual materials to be produced include 8 mm. cartridge films, 16 mm. film strips, 35 mm. slide sets and videotapes. The continuing education program being directed in Seattle will extend to the isolated southeastern Alaska area. The Mt. Edgecombe Medical Society will be coordinating this activity with Seattle. Methods to be used will include the telelectures from Seattle, complemented by slides, videotapes which will be presented on the Juneau and Sitka TV stations, an EKG hotline and visitations from consultants to the southeastern Alaska area.

Community Action Programs:

A series of communication links will connect the University of Washington with community hospitals in Yakima, which, in turn, will provide service to surrounding smaller communities. The main thrust of the program will be continuing education. The communication link will also connect internists in central Washington with Yakima cardiologists by way of an EKG telephone hotline. St. Elizabeth's, Yakima Valley Memorial and New Valley Osteopathic Hospitals are the three general hospitals in Yakima involved in the program. Nine other communities will be linked to the University of Washington. These hospitals are located in Ellenburgh, Moses Lake, Othello, Toppenish, Prosser and Cynnyside.

Five major medical centers are participating in an educational program with the University Hospital. Practitioners from isolated communities will spend a week or more at one of these medical centers to study advances in the care of coronary heart disease. Four of the medical centers are located in Seattle and two are in Spokane.

Related Activities:

In May 1967, a faculty group known as the Change Subcommittee submitted recommendations to the University of Washington on a new physician classification called the "Primary Care Physician" or the preferred term, "Family Physician (FP)." In that report, it was recommended that information in instructional methodology should be delivered by self-teaching systems (reading, automated teaching, film, etc.) to the maximum degree possible and that there should be a minimum of formal lectures.

The Group Health Cooperative of Puget Sound has initiated a health research program in cooperation with the University of Washington to determine use patterns of health care in the Northwest region. The plan will study the delivery of services through satellite clinics of a central hospital.

Doctors Stephen Yarnall and Richard Kronmal have developed a CAI program for the IBM 1130. Based on their efforts, a minimum of 10 CAI programs will be written on electro-cardiograph diagnosis of arrythmias. Audio-visual equipment, including a random access microfilm viewer, will be used with the CAI typewriter terminal. Dr. Theodore Kehlo, Assistant Professor of Physiology and Biophysics, who developed a CAI program for the PB 440, Dr. Robert Bruce, who is directing a project on the IBM 1130, and Dr. Earl Hunt, who has been writing a version of "Coursewriter" on the Burroughs B-5500, will be assisting on the evaluation of this broad effort.

The Computing Center, under the direction of Dr. Donald Bevan, has an IBM 7094, an IBM 7040, a Burroughs B5500, and an IBM 1401. A CDC 6600 will replace the IBM 7040/7094 in July 1969. All remote installations to the computer are on the campus.

Related Activities: 2.

The University of Washington is one of six universities assisting a National Academy of Engineering Committee with Biology and Medicine. The six institutions are Johns Hopkins, Carnegie-Mellon University, Massachusetts Institute of Technology, Ohio State University Research Foundation, University of Virginia, and the University of Washington. Each of the seven-month efforts, which were due to be completed on 30 September 1968, were to (1) develop prototype concepts for relating engineering to the physical, biological, medical, social, and management sciences; (2) to identify local civic and industrial resources and to study the operations of local health and medical care institutions and find problems that can be solved through multidisciplinary efforts; and (3) to develop prototype operational plans for interplay. The goal is to stimulate research and to obtain the best combination of resources to solve urgent medical and health care problems.

University of Washington School of Medicine (Cont.)

Common Carrier Services (1968):

State Common Control Switching Arrangement (CCSA) on Telpak. Dial TWX in the library. Private line from Seattle to Riverton. Preparing for closed circuit TV. Broad band lines planned.

West Virginia University School of Medicine
Morgantown, West Virginia 26506

Type: State supported

Enrollment: 232 (67-68)

Number of Medical Schools in West Virginia: 1

Clinical Facilities: West Virginia University Hospital; Veterans Administration Hospital, Clarksburg; Monongalia County Health Department; and Sundale Convalescent Home.

Medical Library: Data not recorded

Personnel:

Dean	Clark K. Sleeth, M.D.
Audio-Visual Coordinator	Open
Coordinator of Continuing Medical Education	Open
Medical Library Director	Alderson Fry

Statewide Statistics:

Total Resident Population	1,781,700
Non-Federal Physician Population	1,732
Counties	55
Hospitals	75
Hospital Beds	8,618

West Virginia University School of Medicine (Cont.)

Common Carrier Services (1968):

Intra-state, outward WATS, and one Full Period, time shared, outward WATS. Tie lines to the capitol. This fall they will be transmitting on channel 24 but will not be able to receive. Closed circuit TV.

Marquette School of Medicine
Milwaukee, Wisconsin 53233

Type: Privately endowed

Enrollment: 396 (67-68)

Number of Medical Schools in Wisconsin: 2

Clinical Facilities: Milwaukee Children's Hospital and Clinics; Milwaukee County General Hospital and Clinics; Milwaukee County Mental Health Center; Milwaukee Psychiatric Hospital; Muirdale Sanatorium; St. Joseph's Hospital; Lutheran Hospital; and Veterans Administration Hospital.

Medical Library: Volumes, 75,000; Staff, 12½; Budget as of 1 July 1968, $156,000.

Personnel:

Dean.	Gerald A. Kerrigan, M.D.
Assistant Dean for Continuing Education	Marion Mykytew, M.D.
Medical Library Director. . . .	Miss Frances L. Beckwith

Statewide Statistics:

Total Resident Population	4,245,700
Non-Federal Physician Population	4,882
Counties.	72
Hospitals	156
Hospital Beds	18,800

Marquette School of Medicine (Cont.)

Community Action Programs:

About a year ago the Milwaukee Regional Medical Instructional TV Station, Inc. was formed. This corporation was developed by representatives of 12 community hospitals, the Milwaukee Academy of Medicine and the Marquette School of Medicine and includes all of the Marquette affiliated hospitals.

Some of Marquette's plans to participate in activities in the Wisconsin RMP are as follows:

1. They are actively recruiting for a full-time Director of Continuing Education.

2. They have RMP approval but are awaiting funding for:

    a. A Cancer Therapy Program in Southeastern Wisconsin. One to two week in-service training for practicing physicians; monthly regional consultation programs; and education and in-service training for nurses.

    b. Training program for professional and technical personnel in Tissue Typing, and methodology peculiar to immunology.

    c. Project to produce videotapes on Shock for Nurses - Marquette University College of Nursing.

3. Marquette has submitted a proposal to the DRMP for coronary care training for physicians, nurses and technicians to be based at Marquette School of Medicine, Marquette College of Nursing and several Milwaukee community hospitals.

4. Marquette is also awaiting review on a Health Manpower Training Program. The program

Community Action Programs:

was developed by the School of Medicine. Its objectives are:

a. To increase the knowledge and expertise in Internal Medicine of existing health manpower in Wisconsin (clinical traineeships).

b. To develop new paramedical health personnel.

c. To help develop new teachers in Continuing Medical Education located in areas distant from, but associated with the Medical School. (By a program linking the regional trainees as faculty.)

The Marquette Medical-Dental Library is sponsoring a series of informal meetings held at approximately two-month intervals of the health sciences librarians in Southeastern Wisconsin. Marquette and the other members of this group are presently compiling records of serial holdings with the view of producing a union list for Southeastern Wisconsin. Plans are being made for computerizing the union list. The Library is also taking part in a statewide planning project to provide a short course of lessons in medical library techniques and procedures for untrained hospital and clinic librarians.

The Wood Veterans Administration Hospital, one of the teaching hospitals of Marquette School of Medicine, has a broadcast quality color television studio. The Wood VA network is being proposed to connect with that of Marquette to enable linking together the basic science and clinical facilities of the two institutions. In addition, the Marquette University College of Nursing has a closed circuit TV system in its college which is utilized for undergraduate and continuing education. Tapes produced by the College of Nursing include a pharmacology course and a course on the care of cancer patients.

Marquette School of Medicine (Cont.)

Community Action Programs:

Marquette is a member of the Wisconsin RMP. In the past, Marquette has had minimal activity in this area and the Marquette programs have followed traditional lines. Marquette, in conjunction with the Wisconsin RMP, publishes a monthly activity bulletin listing short-term courses available to practitioners as well as certain rounds being conducted by physicians in Allergy, Cardiology and other specialty subjects.

Marquette School of Medicine (Cont.)

Related Activities:

Marquette University received an FCC license in March 1967 for an ETV network in cooperative undergraduate training to include Marquette University (ten classrooms in addition to the Nursing, Dental, and Engineering Schools), the Basic Science Building of the Marquette School of Medicine, and two Nursing Colleges, Alverno and Cardinal Stritch. At present, the facilities with the Basic Science Building are used for undergraduate medical education.

Marquette School of Medicine (Cont.)

Common Carrier Services (1968):

University owned ETV. Transmits to two local colleges. Closed circuit on campus, coaxial cable.

The University of Wisconsin Medical School
Madison, Wisconsin 53706

Type: State supported

Enrollment: 405 (67-68)

Number of Medical Schools in Wisconsin: 2

Clinical Facilities: University Hospitals; Veterans Administration Hospital; Madison General Hospital; Methodist Hospital; St. Mary's Hospital; Medota State Hospital; and the Wisconsin Diagnostic Center.

Medical Library: Volumes, 91,744.

Personnel:

Dean.	Peter L. Eichman, M.D.
Audio-Visual Coordinator. . .	Thomas C. Meyer, M.D.
Medical Library Director. . .	Miss Helen Crawford

Statewide Statistics:

Total Resident Population	4,245,700
Non-Federal Physician Population	4,882
Counties.	72
Hospitals	156
Hospital Beds	18,800

Community Action Programs:

The Medical School's telephone lecture system is part of the "Educational Telephone Network" (ETN) established in 1965 linking the University with 56 courthouses, 48 hospitals and 11 university centers. Although the ETN has been used mainly to present lectures followed by discussions, some programs have included speakers from other medical institutions talking from their offices or places of residence. The ETN is supplemented by a "piggy back" communications technique that has been made available to the University through the facilities of the State Broadcasting Service. The "piggy back" system is officially known as the "Subsidiary Communications Authority." This technique is known as "piggy back" because the signal is superimposed on the FM signals emanating from the State FM broadcasting network. For the most part, this conference network is limited to a 50-mile radius of Madison.

The University of Wisconsin Medical School and the Albany Medical College are two of the six medical institutions in the United States which support FM lectures to rural physicians. The one-hour lectures given by faculty members of the Albany Medical College are generally single concept discussions about a specific medical topic. The University of Wisconsin, in addition to broadcasting spot medical lectures, also features a continuing series of lectures on one given subject. Programs in Wisconsin are broadcast over a state-wide FM radio sub-carrier network. Cost of a special radio receiver, including antenna and receiver, is about $270.00. Visual materials, when required, are mailed out in advance of the program. After each lecture, incoming questions from rural listeners are received by telephone. All listeners participate in the question/answer sessions.

In 1966, the University initiated a Dial-Access Medical Tape Recording Library for practicing physicians. Faculty members of the medical center record four to six minute audiotapes on current medical problems. At the conclusion of each tape, the lecturer gives his name and offers consulting services to the listener. In 1966, the Dial-Access system consisted of 88 audiotapes. In the following year, under the auspices of the Wisconsin Regional Medical Program, the tape

Community Action Programs:

library was expanded to 170 tapes and was made available to the entire medical population of Wisconsin at no cost via inward WATS. In 1967, an agreement was made by the nine medical schools in the Big Ten and the University of Chicago to participate jointly in a ten-university Dial-Access system which would contain approximately 1,000 audiotapes. A proposal for the venture was submitted to the Commonwealth Fund in New York via the Committee for Institutional Cooperation at Purdue. In 1968, still under the auspices of the Regional Medical Program, the Dial-Access library was expanded to 260 tapes and the incoming telephone services extended to the physicians in Minnesota and North Dakota. Copies of the complete audiotapes in the library were also provided to two other states at a cost of $2.50 a tape.

Related Activities:

In 1967, Dr. Thomas Meyer, the Director of Continuing Education for the University, received a one-year grant from the PHS Bureau of Health Manpower to study and evaluate the information requirements of practicing physicians. The object of the effort was to identify educational deficiencies of physicians in order to determine what courses and materials should be offered by the University. The PHS project officer was Norman Tucker. The current project officer is Dr. Marilyn Hutchison. A medical secretary, working for Dr. Meyer, has been sitting in the offices of practitioners. Based on the type of medicine being practiced by these individuals, a computer-generated series of questions was presented to each of the physicians via teletype. The physicians' test scores have been evaluated by the physician and a medical consultant. Early results indicate these physicians were deficient in medical subjects closely related to their daily practices.

The University is at the mid-point of a Slow-Scan television development program. The contractor on equipment is the Westinghouse Corporation (Don Laviana). The object of this effort is to permit on-line transmission of visual materials to remote stations via voice grade telephone lines. A lecturer, during an FM broadcast, will be televised. During the broadcast he will select certain frames of information which will be sent out to listening stations. The selected frames will be viewed on crt. It is anticipated that the development effort will be completed in June 1968.

The computing center, under Mervin Muller, is in the initial phase of development as a Computing Information Utility for the eleven campuses of the University. The Utility is currently emphasizing the development of remote access computing. Some efforts in on-line data acquisition are underway. Computing equipment includes a Univac 1108, CDC 3600/924/LINC, CDC 1604, Burroughs B5500 and other machines.

Related Activities

In the clinical laboratory the University is using an MIT laboratory instrument (LINC) to process clinical laboratory data. The LINC has 16 analog channels and an analog-to-digital converter with a multiplexer. A teletype is used to output laboratory reports, histograms and other data. The LINC was used by Dr. Warner Slack who conducted a small study on a computer-based patient medical history system. The study concerned the ability of a patient to answer medical history questions about himself. The study showed that for allergy histories of 50 patients, the computer printout was superior to the physician record histories. On the other hand, it was less detailed than the physician-reported histories. On the other hand, it was less detailed than the physician-reported histories when dealing with diseases when dealing with diseases such as asthma.

The University's proposal to the National Library of Medicine for a national dial-access tape recording library for the health professions calls for a four-month exploration period to be conducted before the actual implementation period. The first four months will be devoted to the exploration of various methods, alternatives, and problems involved in establishing a nation-wide system and the development of a long-range plan for the implementation of the system. The scope of work for the first phase includes the development of procedures to assure authoritative and current content for the library, developing procedures for selection of library content, equipment, communications systems, and the development of suitable evaluation techniques to measure the effect of the library on medical practices. The proposal recommends that the first phase of the effort be completed by July 1969.

Dr. Frank Schick, Dean, School of Library and Information Science, was designated Principal Investigator on a collaborative effort between the Medical Library Association Committee on Surveys and Statistics (COMSAS) and the School of Library and Information Science (SLIS). The proposed purpose of this effort was to set up the mechanism for a continuing, rotating survey of health science libraries in order to provide an objective data base for historical record and research as well as planning of national medical library resources.

The University of Wisconsin Medical School (Cont.)

Common Carrier Services (1968):

Fifteen intra-state inward WATS. Seven tie lines and nine foreign exchanges to Milwaukee. Four private line teletypes to the computer on campus. Twenty-eight private line teletype to various locations throughout the state. Some data phones for specific projects. Closed circuit TV on campus. Telpak "B" between Madison and Milwaukee.

New system planned with 25 intra-state WATS lines. Ninety-five foreign exchanges planned to go all over the state plus to New York, Washington, D.C., Chicago, and Minneapolis. All lines to be on state Telpak.

APPENDIX A: Glossary of Terms and Schedule of Rates of Common Carrier Services

Automatic Calling Unit (ACU)

A dialing device supplied by the Communication Common Carriers which permits a business machine to automatically dial calls over the communications networks.

The cost for this device varies depending upon the company providing it. An average is about $45.00 per month.

Bandwidth

The difference expressed in cycles per second between the highest and lowest frequencies in a band.

Baud

A unit of signaling speed. In an equal length code, one baud corresponds to a rate of one signal element per second.

Bit

A unit of information content. Contraction of "binary digit", a bit is the smallest unit of information in a binary system of notation.

Carrier System

A means of obtaining a number of channels over a single path by modulating each channel upon a different "Carrier" frequency and demodulating at the receiving point to restore the signals to their original form.

Channel

A path for electrical transmission between two or more points. Also called a circuit, facility, line, link or path.

Data-Phone

A trade mark of the AT&T Company to identify the data sets manufactured and supplied by the Bell System for use in the transmission of data over the regular telephone network. It is also a service mark of the Bell System which identifies the transmission of data over the regular telephone network.

The cost for Data-Phone service ranges from about $50.00 to $175.00 per month.

Data Speed

Paper tape to paper tape transmitting and receiving equipment capable of sending data at speeds of 750 wpm to 1050 wpm. Costs range from $40.00 to $225.00 per month depending on speed and options.

Data Set

A device which converts between the signals of a business machine and signals that are suitable for transmission over communications lines. It may also perform other related functions.

There are a large variety of Data Sets available depending on application. Prices range from $11.00 to $175.00 per month.

Direct Distant Dialing

A telephone service which enables a user to dial directly telephones outside the users local area without the aid of an operator.

Duplex

In communications, pertaining to a simultaneous two-way and independent transmission on both directions. Contrast with half-duplex.

Exchange

A defined area, served by a Communications Common Carrier, within which the carrier furnishes service at the exchange rate and under the regulations applicable in that area as prescribed in the carrier's filed tariffs.

Facility

See Channel.

Facsimile (Fax)

Transmission of pictures, maps, diagrams, etc. The image is scanned at the transmitter, reconstructed at the receiving station and duplicated on some form of paper.

Foreign Exchange Service (FX)

A service which connects a customer's telephone to a remote exchange. This service provides the equivalent of local service from the distant exchange.

The cost of this service depends upon the distance between the customer and the remote exchange. This cost can be approximated by adding $3.00 for each mile between the customer and the distant exchange to a constant charge of $40.00 per month.

Half-Duplex

An alternate, one-way-at-a-time, independent transmission. Contrast with duplex.

Holding Time

The length of time a communication channel is in use for each transmission. Includes both message time and operating time.

Interface

A shared boundary, for example, the boundary between two subsystems or two devices.

Line

See Channel.

Line Switching

The switching technique of temporarily connecting two lines together so that the stations directly exchange information.

Local Channel

A channel connecting a communication subscriber to a central office.

Message Switching

The switching technique of receiving a message, storing it until the proper outgoing circuit and station are avilable, and then retransmitting it toward its destination.

Microwave

All electromagnetic waves in the radio frequency spectrum above 890 megacycles.

Modem

A device which modulates and demodulates signals transmitted over communication facilities.

Multiplexing

The division of transmission facility into two or more channels.

Multipoint Circuit

A circuit interconnecting several stations. Cost for this service varies depending upon the number of stations involved, the distance between them and the terminal equipment used. An approximate minimum cost can be obtained by adding $3.00 for each mile between stations to a constant cost of $15.00 for each station.

Operating Time

The time required for dialing the call, waiting for the connection to be established, and coordinating the forthcoming transaction with the personnel or equipment at the receiving end.

Picturephone

A service mark of the AT&T Co.: to identify a telephone service that permits the user to see as well as talk with the person at the distant end. This service is available only between Washington, D.C., Chicago, Illinois and New York, N.Y. Cost ranges from $8.50 to $13.50 for the first three minutes.

Perforator

A keyboard device for punching paper tape.

Private Line or Private Wire

A channel or circuit furnished a subscriber for his exclusive use. The cost for this service varies depending upon the number of stations involved, the distance between them and the terminal equipment use. An approximate minimum cost can be obtained by adding $3.00 for each mile between stations to a constant cost of $15.00 for each station.

Reperforator

A device that automatically punches a paper tape from received signals.

Selectric Calling

The ability of a transmitting station to specify which of several stations on the same line is to receive a message.

Station

One of the input or output points on a communication system.

Tariff

The published rate for a specific unit of equipment, facility or type of service provided by a Communications Common Carrier.

Teletype

Trademark of the Teletype Corporation, usually refers to a series of different types of teleprinter equipment such as transmitters, tape, punches, reperforators, page printers, utilized for communications systems.

Teletypewriter Exchange Service (TWX)

A service provided by the Bell System to interconnect teleprinters using exchange switching. Similar to regular telephone service, customers dial calls from station to station but communicate using teleprinter equipment rather than telephones.

Cost is made up of two elements; teleprinter rental and toll charge. Toll charges are based on time and the distance between stations.

A teleprinter can be rented for $45.00 per month. A call between Washington, D.C. and Chicago, Illinois will cost $.75 per minute.

Telpak

A service offered by communications carriers for the leasing of wide band channels between two or more points. There are two types of Telpak services available, C and D. C Telpak is equal to 60 voice grade channels and costs $25.00 per mile per month. D Telpak is equal to 240 voice grade channels and costs $45.00 per mile per month.

Tie Line

See Private Line.

Touch Tone

A registered service mark of AT&T Co. which identifies its pushbutton dialing service. Can also be used as data input devices.

Costs vary but average $5.00 per month plus basic telephone service.

Voice Grade Channel

A channel suitable for transmission of speed, digital or analog data, or facsimile, generally with a frequency range of about 300 to 3,000 cycles per seconds.

The cost of a voice grade channel is approximately $3.00 per mile per month.

Wide Area Telephone Service (WATS)

A service provided by Telephone Companies which permits a customer by use of an access line to make calls to telephones in a specific zone on a dial basis for a flat monthly charge. WATS is available as an inward or outward, interstate or intrastate service.

The cost depends upon the number of zones (1-6) to which a customer has access and ranges from $130.00 to $2,325.00 per month.